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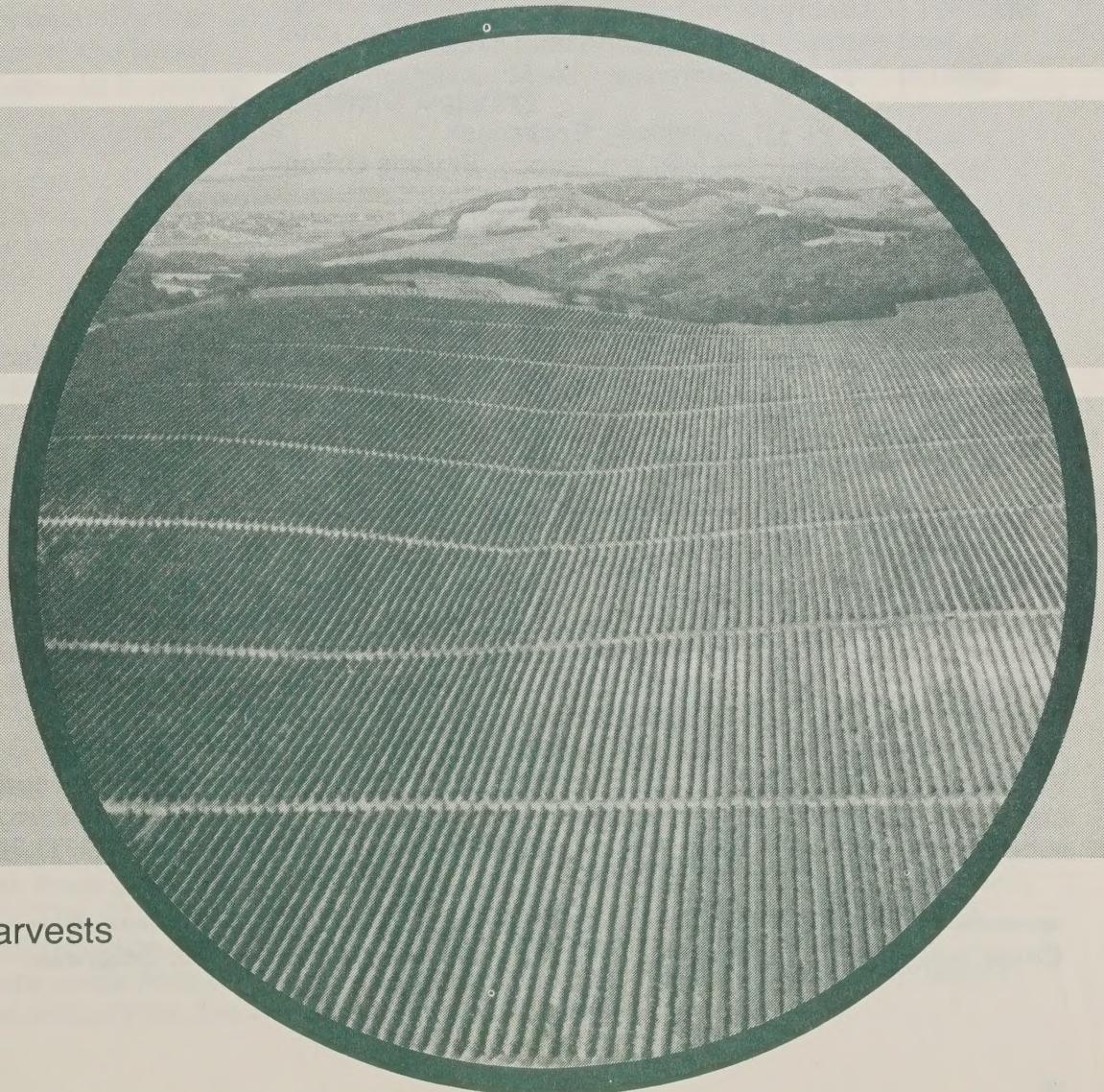
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Eastern Europe

Situation and Outlook Report



Another Year of
Bumper Grain Harvests

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Eastern Europe's economic performance improved during 1986, with most countries registering higher national income and industrial growth than in 1985. For many countries, however, the growth was mostly a recovery from a particularly bad year in 1985. Growth continues to be hampered by energy problems, deteriorating terms of trade, lack of competitiveness in manufacturing sectors, and a consequent decrease in the region's share of world trade. Agricultural output rose significantly in many countries, but also represented a recovery from steep declines in 1985.

Agricultural policy continued to stress self-sufficiency—in terms of balanced farm trade—in the northern countries and increased exports from the southern countries. Because of limited investment funds and production inputs, officials stressed more efficient use of resources and introduction of the latest yield-enhancing technology. As in earlier years, profitability problems were addressed by higher producer prices and subsidies. With the decrease in physical, commodity-specific targets, prices have become a major planning tool. However, increases in retail food prices were much more moderate than producer price rises.

Growth in overall investment in the region in 1986 was moderate, and agriculture's share in total investment held steady. Progress on land improvement was slow and uneven. The German Democratic Republic (GDR) and Romania, for example, reported good progress in irrigation, but the other countries showed little gain. Plant protection agents remained in short supply. Machinery inventories increased in most countries, although limited selection and spare parts shortages were persistent problems. Input prices continued to rise.

East European grain output totaled 113 million tons, up 6 percent from 1985 and the second largest crop ever. The GDR, Romania, Poland, and Yugoslavia all harvested record crops. The wheat and corn crops rose to 39 million tons each, almost entirely on the

strength of higher yields, which resulted from favorable weather, improved grain varieties, and greater attention to cultivation practices. Grain imports in calendar year 1986 were an estimated 7 million tons, down from 8 million in 1985. The region remained a net importer, but only of 2 million tons, compared with average net imports of 5.8 million tons in 1981–85.

Total 1986 oilseed production (soybeans, sunflowerseed, and rapeseed) reached 5.9 million tons, up 28 percent from 1985. The increase stemmed from more normal weather in the Balkans after the severe drought of 1985 and from increased area. Sunflowerseed production increased the most—40 percent—based largely on the development of a disease-resistant hybrid in Yugoslavia. Oilseed and meal imports rose substantially, due mainly to production shortfalls in 1985 and moves in many countries to improve feed rations. Meal consumption was up 3 percent.

Sugarbeet production, at 45.7 million tons, was down 3.5 percent, largely because of reduced area. In many countries, however, the sugar content of the beets increased. While Poland's potato crop rose significantly, production for the entire region reached 63.3 million tons, slightly below the 1984 and 1985 levels, but above the 1981–85 average. Cotton imports held steady, but the U.S. market share fell considerably because of increasing countertrade with other suppliers.

Eastern Europe's livestock performance was uneven. Recovery continued in Poland, and output expanded in Czechoslovakia and the GDR. Livestock came under stress in the southern countries, however, because of drought—reduced feed supplies, rising production costs, and falling foreign demand for the region's livestock exports. Inventories of hogs, cattle, and cows declined. Even so, meat production was record high, with significant advances in Poland and the GDR. Milk and egg production, on the other hand, declined. Livestock and livestock product exports fell sharply, partly due to Chernobyl-related losses, but also because of slack world demand.

The region's trade balance continued to deteriorate in 1986, and a particularly sharp drop in hard currency trade was met with a corresponding increase in trade within the Council for Mutual Economic Assistance. The worsening trade balance resulted mainly from the fall in oil prices, which hurt the region's petroleum product exports. The agricultural trade balance also deteriorated, due to poor 1985 production and falling world livestock prices. The Chernobyl-related EC ban on imports of East European agricultural products was also a factor, but the losses were smaller than originally expected. Net external debt rose to \$81.0 billion, largely because of the falling value of the dollar. Poland and Yugoslavia reached new rescheduling agreements, and Romania, too, was forced to seek rescheduling.

U.S. agricultural exports to Eastern Europe in calendar 1986 fell 10 percent to \$433 million, as animal product exports plunged 31 percent. Coarse grain exports also

declined, and cotton exports fell to almost nothing. Because of the Export Enhancement Program (EEP), wheat exports rose from 85,000 tons in 1985 to 423,000 tons. Exports are projected to rise somewhat in 1987, as large wheat and coarse grain shipments continue under the EEP.

Agricultural production in 1987 probably will be only slightly higher than in 1986. The region's excellent agricultural performance of 1986 plus an extremely cold winter will make it difficult for Eastern Europe to post another strong year-to-year gain. Grain output is forecast at 108-113 million tons. Little change is expected in oilseeds and other crops. The severe 1986/87 winter created serious difficulties for the livestock sector, and meat output may rise only 1 percent. Farm exports probably will increase in 1987, but prices will remain low, and the overall balance of payments problems experienced in 1986 likely will continue.

GENERAL ECONOMIC SITUATION

Eastern Europe's economic performance continued to improve during 1986. Among the northern countries,^{1/} Poland had its best year since the late 1970's, while economic growth in Czechoslovakia and the German Democratic Republic (GDR)—though below last year's and below trends of recent years—was still respectable. The drought that plagued the southern countries in 1985 eased off, allowing some recovery in agricultural production, except in Hungary, which suffered continued drought. However, surface water levels in the region were still low, causing shortages of electric power and irrigation water, affecting both industrial and agricultural production. Energy shortages were most serious in Romania, Bulgaria, and Yugoslavia.

Except for Czechoslovakia, the GDR, and Romania, the countries of the region continued to implement reforms to increase the economic independence of enterprise management and to "intensify" production through more efficient use of resources, improved technology, and higher quality production.

Moderate Economic Growth Rates

Except for Hungary, national income growth in the region in 1986 ranged from 7.3 percent in Romania to 3.4 percent in Czechoslovakia, nearly the best performance of the last decade. With two exceptions, the performance was at or above the planned level. The Hungarian growth rate, 0.5 percent, was disappointing, reflecting continued serious economic problems. None of Hungary's main production sectors reached the planned rate of growth. Exports were lower and imports higher than the year before, the terms of trade deteriorated further, and the foreign trade balance showed a deficit. Despite slow growth, Hungary still represents a model of economic development in Eastern Europe.

^{1/}Northern countries: Czechoslovakia, the German Democratic Republic (GDR), and Poland. Southern countries: Bulgaria, Hungary, Romania and Yugoslavia. Albania, belonging to the latter group, is not analyzed here because of lack of reported data.

Growth in industrial production during the year was more evenly spread than that of national income, with the annual rate above 4 percent in Bulgaria, the GDR, Poland, Romania, and Yugoslavia. Growth was lowest again in Hungary, at only 1.8 percent. The rates stayed fairly close to the planned levels, with the exception of Yugoslavia where industrial production performed significantly better than planned.

Agricultural production, on the other hand, showed a strong recovery in all drought-affected countries, except Hungary. The reported rate of increase was 10 percent in Bulgaria, nearly 13 percent in Romania, 7 percent in Yugoslavia, and 7.5 percent in Poland. The unusually high rates of growth for these countries were due to the low base of the preceding year. However, the official

Romanian growth rate is likely inflated because of questionable statistical practices that overestimate output of grain and some livestock products. Growth in agricultural production in Hungary and Czechoslovakia was well below plan, while Poland repeated the excellent performance of 1984.

Income and Consumption Levels

The modest overall economic progress was reflected in income and consumption levels, with GDR showing the best progress, followed by Hungary, Bulgaria and Czechoslovakia. Living standards improved modestly in Poland, and none at all in Romania. A number of food items were still rationed in Romania, while other consumer goods were in short supply. In Poland only meat and chocolate were still rationed,

Principal economic indicators

Indicator and year	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Yugoslavia
Percent change from previous year							
National income							
1985 plan	4.1	3.2	4.4	2.5	3.0-3.5	10.0	2.5
1985 actual	1.8	3.3	4.8	-0.5	3.4	5.9	0.5
1986 plan	4.0	3.5	4.4	2.3-2.7	3.2	10.0-12.0	3.0
1986 actual	5.5	3.4	4.3	0.5	5.0	7.3	3.6
1987 plan	4.6	3.0	4.5	2.0	3.0-3.5	8.0-9.0	4.0
Agricultural production							
1985 plan	3.2	0	0.8	1.0	-0.8-1.4	6.0-6.8	2.5
1985 actual	-7.2	4.0	1.4	-6.0	0.9	0.1	-8.0
1986 plan	7.4	2.5	0.3	3.0-3.5	1.1-2.7	6.0-7.0	8.0
1986 actual	10.0	0.5	(4.3)	1.0	7.5	12.8	7.0
1987 plan	3.9-4.5	NA	0.4	4.5-5.5	0.5	6.0-7.0	3.0
Industrial production 1/							
1985 plan	5.2	3.0	3.8	3.0	4.0-4.5	7.5	4.0
1985 actual	4.0	3.4	4.5	1.0	3.8	4.9	2.7
1986 plan	4.5	2.6	4.3	2.0-2.5	3.2-3.6	7.0	3.0
1986 actual	4.3	3.1	4.3	1.8	4.4	7.7	4.2
1987 plan	4.6-5.4	2.8-3.4	4.6	2.0-2.5	3.4	6.0-7.0	4.5
Capital investment 1/							
1985 plan	8.0	9.5	0	0	-1.2	8.3	0
1985 actual	2.5	6.5	2.0	0.2	5.0	1.6	-10.0
1986 plan	12.0	0.3	1.7	3.5-5.1	4.2	6.0-8.0	2.0
1986 actual	(4.0)	2.8	5.0	5.1	3.7	1.2	NA
1987 plan	6.5-7.9	NA	(-2.3)	(1.0)	3.2-4.3	6.0-7.0	3.8
Per cap. real income							
1985 plan	3.0	NA	4.0	1.5-2.0	0	NA	NA
1985 actual	(1.0)	(3.0)	(4.5)	(-0.3)	(0)	NA	2.0
1986 plan	2.0	NA	4.0	1.0-1.5	0	NA	NA
1986 actual	NA	2.9	(4.3)	(0.7)	4.0	NA	NA
1987 plan	NA	NA	4.0	1.0-1.5	NA	NA	NA

NA = Not available. () = Estimate. 1/ Socialized sector only.

Source: State plan and plan fulfillment reports from the respective countries.

although meat supplies were adequate in the countryside. In general, shortages of higher quality consumer goods, such as clothing and appliances, persisted throughout the region.

Causes of Stagnation

Although Eastern Europe is recovering from the crisis years of the early 1980's, it is still held back by long range problems, including recurring energy shortages, the technology gap, deteriorating terms of trade, and environmental degradation. Also, the region's gross hard currency debt, which grew from \$85.2 billion at the end of 1985 to about \$86.1 billion in December 1986, placed a heavy burden on the economies of Poland, Romania, and Yugoslavia. Hungary was also hurt by the debt repayment burden. The mounting debt contributed greatly to the deteriorating economic infrastructures in the affected countries, due to continuing shortages of foreign exchange needed to import spare parts, machinery, and raw materials from the West. Affecting economic performance more directly was the high annual inflation rate of about 90 percent in Yugoslavia, 18 percent in Poland, and over 7 percent in Hungary.

Outlook for 1987

The foreign debt burden will continue to constrain improvement in the region's economies for many years to come. The resulting foreign exchange shortages will curtail necessary imports of inputs and spare parts for machinery and equipment, affecting industrial and agricultural production as well as foreign trade. The resulting erosion of the region's share of world trade represents the biggest threat to its economic development. In addition, the Yugoslav economy will be strongly affected by its high rate of inflation, which reached 130 percent in the first half of 1987.

The bitterly cold weather in December and January throughout the region caused widespread disruptions in transport, and in energy and industrial production, and probably affected livestock production to some extent. Despite the severe winter, the 1987 crop should be satisfactory, except for fruit production in Poland, which suffered serious losses.

On the positive side, the lifting of economic sanctions against Poland, announced by the United States on February 19, may improve the economic situation in that country. While in the short term improvement is likely to be marginal, in the longer term Poland may increase exports to the United States, making it easier to find hard currency credits to modernize its economy. (*Francis Urban*)

AGRICULTURAL POLICY AND PRICES

Fine tuning of existing programs characterized agricultural policy in most of Eastern Europe during 1986. Continued improved commodity performance--particularly in crops--lessened arguments for substantial policy shifts. Ongoing farm profitability problems were met in the traditional manner of increased producer prices and higher subsidies. Little improvement in profitability occurred, however, and costs and profits in farm production, rather than the level of output, is the main agricultural policy issue for the remainder of the decade.

In Poland, refinements in farm policy continued as they have since the general economic reform announced at the beginning of the 1980's. Private agriculture continued to receive favorable treatment across the region, except in Romania, where further restrictions were imposed.

Policy Emphasizes Efficiency, Technology

Basic agricultural policies across the region remain unchanged: self sufficiency--in terms of balanced farm trade--for the northern countries and higher exports from the southern countries. Because of limited investment funds and production inputs, officials stress more efficient use of resources and introduction of the latest technology to raise yields. This is particularly the case in the GDR and Czechoslovakia, where existing input use rates are high and no new agricultural land is available.

In the GDR, officials strove for better coordination between the country's specialized crop and livestock farms through regional cooperative councils. These councils received increased authority to plan production at the

expense of cooperative autonomy. Farm activities effectively have been recentralized on the local level so that the councils represent all member cooperatives in the planning process.

Farm policy in Poland calls for rebuilding the country's neglected infrastructure through expanding rural water supplies, improving land quality, increasing deliveries of fertilizers and plant protection agents, and completing mechanization of basic farming activities. However, the country's severe shortage of investment capital means that infrastructure improvements will not be realized for several years.

Producer Prices Rise, But Profits Depressed

With the spread of economic reforms, producer prices have acquired increased importance in farm decisionmaking at the expense of physical, commodity-specific targets. Prices are now the major planning tool to influence cropping and livestock raising patterns. They are changed at least once a year in all countries to boost or retard output.

Producer price developments during 1986 repeated recent trends: a relatively faster increase in prices of crops than livestock except in Hungary and Poland. Livestock exports--live hogs as well as poultry meat and pork--are very important hard currency earners for Hungary. Producer prices were raised in Hungary last year for slaughter hogs and poultry to improve profitability and to provide more pork and poultry for export. Protein-based feeds also declined in price by 5 to 7 percent, investment subsidies were introduced for dairy and hog farms, and taxes were reduced on milk output, all in an effort to improve profitability. There were no changes in Hungarian cattle and beef prices in 1986, however, reflecting weak export prospects and sufficient domestic supply.

Polish officials, taking advantage of another year of above-average grain and feed harvests in 1986, continued to boost prices for livestock more than those for crops. Because officials are encouraging ruminant production, cattle, milk, and wool prices increased up to 20 percent, outstripping rises in other livestock prices. Grain prices were up between 7 percent and 8 percent for wheat

and barley and just over 5 percent for rye and oats, all below the 11.5-percent average increase in all farm procurement prices.

In Poland, higher 1986 prices and planned increases for 1987 should cover all increases in taxes and production costs, but they will not significantly raise farm income, which is about 90 percent of urban income. Farming has been one of the best performing sectors of the post-martial law economy, but so long as farm income fails to be competitive, the outflow of young rural labor will continue.

In Yugoslavia, producer prices for 1987 crops and livestock were announced in September 1986, following a supplemental increase in July for 1986 prices. Prices for 1987 rose a flat 35 percent for all commodities except wheat, which had a 43-percent increase. The Government also agreed to subsidize interest rates for loans taken for production and storage of major farm commodities. However, inflation, running at close to 130 percent in early 1987, will wipe out most of the production incentives provided by higher producer prices and investment subsidies.

Subsidies Remain High

Despite rhetoric calling for more self financing in the food economy, subsidies to farm producers and consumers remained high in 1986 and accounted for significant shares of national budgets. The high political profile of retail food prices--particularly in Poland and Yugoslavia--and the necessity to improve farm profitability work against reducing subsidies.

Payments in Czechoslovakia to cooperative and state farms facing financial difficulties totaled \$583 million last year, while in Poland subsidies on food products accounted for 21 percent of all subsidies in the entire economy. Retail food price subsidies are actually increasing in Poland. They rose 40 percent in value over the 1985 level, more than twice the rate of increase in retail prices. Subsidies are also rising in the GDR where the Government has stepped up state support to ailing cooperative farms.

Food Price Increases Moderate

Only three countries reported retail food price increases in 1986 and 1987: Hungary,

Change in Total Retail and Food Prices, 1980-86



Poland, and Yugoslavia. The Hungarian increases were selective and were under 10 percent in 1986. Hungarian meat prices rose on average 18 percent in March 1987, primarily to reduce subsidies and free up supplies for export. Increases were more substantial, and covered more products in Poland and Yugoslavia and largely reflect inflation.

During 1986, retail food prices were raised an average 15 percent in Poland. The increases were designed to offset rising costs in the food processing industry. Nonmeat prices rose in March and meat prices advanced in August. Some of the individual product increases were substantial. For example, by early 1987, sugar prices had nearly doubled year-earlier levels. Despite the large price hikes, food subsidies in 1986 totaled \$2.2 billion. Retail prices are not indexed to producer prices so retail subsidies automatically rise with increases in producer prices.

In late March and early April 1987, official prices in Poland--covering staple foods such as flour, meat, and dairy products--went up an average 10 percent, with butter prices up the most at 25 percent. The large butter price increase was designed to spur demand for more plentiful vegetable oil. No further increases are planned this year. Annual price rises for the rest of the decade should remain relatively moderate if commodity production continues its present growth.

Food prices in Yugoslavia are theoretically set by self-managing associations of food processors and retailers. Federal Government intervention has increased, however, as the associations adopted large wholesale and retail price increases to offset inflation. For example, an average 60-percent increase in retail bread prices last summer was quickly rescinded by the Yugoslav Government after strong consumer protests.

The Yugoslav Government intervened again earlier this year when it scaled back industry proposals for increases in wholesale food prices. Vegetable oil, meat, and sugar prices rose between 10 percent and 18 percent in March, while some meat processors had requested increases of up to 400 percent. Meat prices rose an additional 20 percent in May along with a 15-percent increase in milk prices. The Government has chosen to maintain some degree of food price stability at the expense of food industry profits and the policy of decentralized price reform. Bankruptcies among processors, particularly slaughter houses, could occur as a result, but higher government support to ailing firms is more likely in the current political situation.

Food supplies generally improved or remained the same across the region except in Romania. The food situation there continues poor, with meat either unavailable or rationed, depending on location. Domestic food output suffers from poor management and heavy-handed central planning, while exports retain a high share of production as the Government strives rapidly to pay off Romania's foreign debt.

Treatment of Private Farming Mixed

Policy towards private agriculture was favorable during 1986 in Poland and Yugoslavia where this type of farming predominates, but was again unfavorable in Romania. The extremely difficult problems facing agriculture caused Polish and Yugoslav officials to favor expansion of land under private cultivation. There is widespread consensus in Yugoslavia that the current limit on non-mountainous private farms to 10 hectares has created an inefficient and unprofitable farm structure. Discussions to double this limit were more serious than usual during 1986, and a constitutional amendment

was offered to bring about the change. Adoption is unlikely this year, however.

The Polish communist party supports expansion of long term leasing of state lands to private farmers because of inadequate resources in the socialized sector to till these lands. Polish officials also encourage private individuals with credit and tax exemptions to open mills and bakeries, particularly in rural areas, to cope with an overburdened official procurement and food processing structure.

The Romanian Government continued to restrict the freedom of private agriculture. Effective with the 1987 wheat crop, each family on a cooperative farm is to sow at least 500 square meters of wheat on its private plot. The harvest from this area is to be turned over to procurement officials in exchange for wheat from an equivalent area of cooperative farm's output. Since yields are consistently higher on private plots than on cooperatives, this policy in theory provides an uncompensated net grain inflow to the state. It's probable that yields on the affected private areas will quickly fall to the cooperative level. This program was supposedly in effect for 1986-crop corn.

(Robert Cummings)

INVESTMENT AND INPUTS

Information on 1986 capital investment for the region is scanty, particularly in the agriculture sector. Total investment growth accelerated in the GDR and Yugoslavia. Bulgaria achieved a 4-percent growth rate, but this was below the planned level. Investment growth was below plan and modest in Poland, at 3.7 percent, but above plan in Czechoslovakia and the GDR. In real terms, however, investment growth was probably slower than these numbers indicate because of the high rate of depreciation of capital stock and, in some countries, high inflation.

Investment in Bulgaria went into housing construction and the completion of industrial projects already in progress. In Czechoslovakia, primary importance was given to construction of energy plants, while in the GDR investment was directed at plant modernization and expansion of the land irrigation system.

Agriculture's share of total investment remained stable despite planned increases. It remained about 8 percent in Bulgaria, Czechoslovakia, the GDR, and Yugoslavia but was up to 20 percent in Poland. Slow introduction of high technology remained a serious problem for East European agriculture. The GDR has made some advances in the introduction of computers in agriculture, but in other countries progress was minimal.

Slow Progress in Land Improvement

Much of the agricultural land in Eastern Europe is degraded or in need of improvements because of prolonged past neglect and abuse: excessive use of heavy machinery, which has severely compacted soils; improper cultivation, which exacerbates erosion; and often excessive application of fertilizers and other chemicals, which increases soil acidity. In addition, large agricultural areas still require drainage works, while in the southern countries prolonged droughts of recent years underline the need for better maintenance and expanded irrigation systems.

Progress in this respect during 1986 was slow and uneven. In Poland, nearly 3.5 million hectares of arable land still await drainage or first-time irrigation, while drainage works on substantial areas are not being maintained. Though the plan called for draining 110,000 hectares, no progress was made during 1986. The plan for 1987 calls for a 14-percent increase in drained area. Yugoslavia, similarly, reports a lack of progress on land irrigation and other improvement works.

The GDR, on the other hand, reports good progress in land improvement. In 1986 more than 95,000 hectares of arable land were developed for irrigation. Romania, likewise, did well, with irrigation work in progress on 243,000 hectares, including 46,000 hectares to be commissioned in spring 1987. An additional 50,000 hectares were reportedly irrigated from local community resources. By the end of 1986, the total irrigated land in Romania reached nearly 3 million hectares, close to one-third of the total arable land of the country, though it is doubtful that the irrigation equipment was in working order on all this land. Also, drainage work was carried out on 169,000 hectares and anti-erosion work on 126,600 hectares. Bulgaria and

Country	1974-76	1983	1984	1985	2/ 1986
Kilograms/hectare of arable land					
Bulgaria	145	244	239	235	223
Czechoslovakia	311	340	341	333	330
GDR	369	290	314	328	335
Hungary	258	300	288	253	288
Poland	237	215	231	222	240
Romania	87	110	110	113	115
Yugoslavia	86	118	125	127	130
Total	201	210	216	212	221

1/ Nitrogen, phosphate, and potassium in nutrients. 2/ Estimates.

Sources: Statistical Yearbooks of respective countries and country plan fulfillment reports.

Czechoslovakia, however, report little progress on land improvement.

Improved Fertilizer Situation

After declining in previous years because of production difficulties, fertilizer use in Eastern Europe increased last year by 5 percent, from an average of 212 kgs/ha of arable land to 221 kgs/ha. This was the first substantial increase in the last 5 years. There was some decrease in Bulgaria and Czechoslovakia because of smaller supplies, while use increased in the other countries.

In Poland, where fertilizers are traditionally in short supply and unevenly distributed between the socialized and private sectors, fertilizer supplies in 1986 improved by 8 percent over the previous year and private farmers appeared to be better supplied than in the past. Stocks, particularly of nitrogen fertilizers, are still below the required level. Fertilizer deliveries and stocks are adequate in the GDR and Yugoslavia, and about the same as last year in Hungary, short of the requirement. Hungary, however, just completed a new liquid fertilizer plant, which will allow it to fertilize an additional 130,000 hectares of land, or more than 8 percent of the present grain area.

Fertilizer use in Yugoslavia increased in 1986 from 127 to 130 kgs/ha of arable land and should increase more in the current year. The Yugoslav fertilizer industry, however, is under financial stress due to losses sustained in previous years because of high costs of imported raw materials. Thus, the industry can operate only with heavy subsidies.

Fertilizer use is also being subsidized, but on a diminishing scale, due to lack of funds.

The improvement in fertilizer supplies is expected to continue, though constrained by perennial energy shortages. The unusually cold 1986/87 winter, as in 1985/86, may have again affected fertilizer production.

Czechoslovakia and the GDR face a serious problem of over-fertilization, but the problem also exists in Hungary and, to some extent, in Poland in the form of rising soil acidity, as well as surface and ground water pollution. These problems are being reevaluated. The soil acidity problem is being dealt with by the application of large quantities of lime. Lime, however, is also often in short supply. The GDR is developing a system to more efficiently apply fertilizer at reduced rates. Other countries, however, have still to learn to deal with the problem.

Pesticides Still in Short Supply

Plant protection agents (PPA) are in perennial short supply in the region. Only the GDR and Yugoslavia report sufficient supplies, both in 1986 and for 1987. The chief ingredients in PPA production are imported from the West and imports suffer from hard currency shortages. This condition is unlikely to change in 1987. In addition, modern equipment now being introduced in the West, allowing more efficient PPA application with reduced amounts, is still unknown in the region. As a consequence, crop yields will continue to suffer.

Country	Tractors				Grain combines			
	1974-76	1984	1985	1986	1974-76	1984	1985	1986
1,000 units								
Bulgaria	64	58	57	55	10	9	9	9
Czechoslovakia	142	134	163	170	20	18	19	20
GDR	140	153	156	158	12	15	16	17
Hungary	62	56	55	59	14	12	12	13
Poland	400	805	855	884	22	49	52	56
Romania 2/	121	168	174	184	42	43	45	49
Yugoslavia 3/	226	706	809	882	71	9	10	10
Total	1,155	2,080	2,269	2,392	131	155	163	174

1/ As of January 1. 2/ Self-propelled combines only. 3/ All types of combines.

Sources: CEMA Statistical Yearbook, FAO Production Yearbook, and reports from U.S. Agricultural Counselors in Eastern Europe.

Machinery and Equipment Situation Improves

Inventories of agricultural machinery improved in 1985 compared with a year earlier, but later data are not yet available. Czechoslovakia, Hungary, Poland, and Yugoslavia all report increases in machinery numbers, but numbers declined in Bulgaria.

The GDR and Yugoslavia report a sufficient number of tractors and harvesters, as well as spare parts. In Czechoslovakia, the number of tractors and grain harvesters increased over last year by 5.5 percent, but deliveries of other machinery, such as potato and sugarbeet harvesters, fell 23 and 50 percent respectively. In Hungary the number of new tractors increased by 4,000 and new combines by 720.

In Poland the farm machinery situation has steadily improved over the past 4 years, but supplies are still inadequate and the quality is often poor. There is still a big demand for tractors, harvesters of all kinds, pesticide sprayers, milking machines, and milk cooling tanks. In addition, the range of tractors is considered narrow, and the number of models in use needs to be considerably increased. The situation in Bulgaria and Hungary is considered satisfactory in terms of the quantity of equipment, but the situation in Romania is much worse than in Poland. Besides, Romania is experiencing a painful energy shortage and has had to rely increasingly on horses in the last few years. The energy shortage has also affected other countries of the region, but not with the same intensity.

The farm machinery situation is likely to improve in 1987, though quality, range and spare parts problems will remain. These problems will remain most serious in Romania and, to a lesser extent, in Poland. At the same time machinery prices will likely increase in most countries.

Progress in Storage Facilities

Good harvests during the last few years have aggravated the old problem of insufficient storage space. Crops have often been stored in inadequate temporary facilities and have been subject to deterioration. Most country plans have called for a rapid expansion of storage facilities. Specific steps are being taken in Hungary, which is building new facilities capable of storing 685,000 tons, and in Poland which has programmed the construction of 10 new grain elevators, including six with a capacity of 50,000 tons. Work on seven of these elevators is well advanced and is expected to be completed in the next 2 years.

Input Prices Increase

Input prices increased last year in most countries of the region, except in the GDR, where they held steady. Moreover, petroleum and petroleum product prices in the GDR declined sharply in 1986, after increasing the year before.

In Poland farm input prices increased between 15 and 20 percent. Prices of plant protection agents increased by 15 percent, and fertilizer and feed prices advanced 15-20 percent. Price increases for farm machinery

were limited to 17 percent, after a direct intervention of the National Union of Farmers. Despite the price increases, input subsidies in Poland remain high. They declined in 1984 but went up again in 1985 and 1986. In 1986 they amounted to 137 billion zlotys (\$685 million) for plant protection agents, fertilizers, and farm machinery.

In Yugoslavia, fertilizer prices rose some 50 percent during 1986, a moderate increase in view of the country's high inflation rate. Price increases for other inputs, however, were much higher than subsidy increases. The fertilizer subsidy was fixed at 30 percent of the producer price in December 1985, at 10 percent for plant protection agents, and at 20 percent for high quality seed. However, the shortage of government funds limited the sums effectively disbursed for subsidies.

Input prices will continue to climb in 1987. In Poland for example, while food prices rose an average of 10 percent in March 1987, coal prices increased 51 percent, gasoline and natural gas prices by 25 percent, and electricity prices by 23 percent. (*Francis Urban*)

GRAIN AND FEED

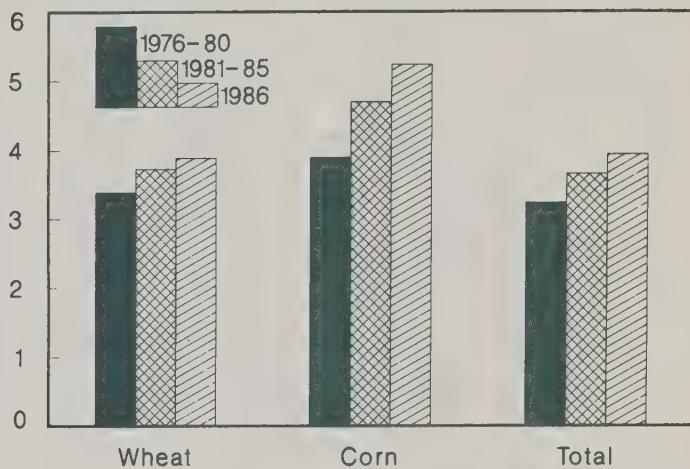
Regional grain output in 1986 reached 113 million tons, 7 percent above the 1985 harvest and the second largest crop ever (table 1). Records were set in Poland, Romania, and Yugoslavia. Corn and wheat crops were excellent; each totaled 39 million tons and corn production was record high. Harvested grain area—28.9 million hectares—was up slightly from 1985, but higher yields accounted for most of the increased harvest (table 2).

Yield Improvements Continue

Although generally favorable weather is responsible for much of 1986's performance, improved fertilizer use and grain varieties and attention to cultivation practices underlay Eastern Europe's extraordinary improvement in yields since 1980. The average total grain yield in 1981-85—3.64 tons per hectare—was 12 percent higher than in 1976-80. Average regional output as a result rose to 104 million tons in 1981-85, versus just 94 million in 1976-80. In 1986, the corn yield—5.16 tons

Selected and Total Grain Yields

Tons per hectare



per hectare—was record high and the total grain yield was a near record at 3.9 tons. Nowhere has the impact of new varieties been so visible as in the GDR. During 1986, new strains were sown on two-thirds of grain area. New corn hybrids also played a role in improving Yugoslavia's corn yields.

The excellent total grain output masked important shortfalls, however. Wet weather during harvesting severely reduced the quality of the Yugoslav wheat crop to the point where substantial imports were required. Drought in Czechoslovakia and Hungary reduced wheat crops in those countries to the lowest levels in 4 years. However, the warm fall in Hungary benefited the corn crop because a longer growing season allowed a large area of corn silage to mature as grain. Corn output rose to 7.2 million tons, 6 percent above 1985 and well above the 1981-85 average.

Romania's grain harvest increased in 1986, but the improvement was well below official pronouncements. The 1986 crop is estimated by USDA at 25.6 million tons, versus the official harvest of 30.3 million tons. No production data on individual grains have been provided by Romanian officials. Growing conditions during 1986 and the technical state of Romanian agriculture do not support a crop as high as the official announcement. The inflated production is due to reporting output on a bunker basis with no weight discount to standard moisture content. Since corn is harvested on the ear and harvesting operations generally begin when moisture levels are high, corn output is

routinely inflated. Wet weather during the summer 1986 harvest likely raised bunker weights and reduced grain quality.

Feed Supplies Decline

The harvest of non-grain feeds--hay, grasses, corn silage, and feed roots including feed potatoes--in 1986 was below that of 1985. Czechoslovak officials, for example, reported a substantial decline in the non-grain harvest. Crop shortfalls were also reported in Bulgaria, the GDR, and Hungary. Improvements were reported only in Romania. Non-grain feed yields in the region are more susceptible to adverse weather because these crops receive less priority than grains in varietal development, cultivation, chemical applications, and sowing on prime land. The impact of 1986's shortfall on total feed supplies and livestock production in 1986/87 will be mixed, however. The GDR and Czechoslovakia should be able to compensate by increased grain feeding and imports if necessary, but Bulgarian feed supplies will continue extremely tight. The higher-than-average potato harvest, and normal hay and silage harvests in Poland offset inadequate mixed feed supplies, supporting hog and poultry expansion.

Imports Continue To Decline

Complete trade data are available only through 1985, and in that year imports by the region's major markets--the GDR and Poland--continued to decline (table 3). GDR purchases dropped more than 1 million tons from 1984 to 2.6 million tons. Polish imports were down to 2.3 million tons from 2.7 million. Purchases by Poland fell again in 1986 and GDR imports are expected to drop below 2 million tons in 1987.

East European grain imports continued to decline during 1986. Estimated purchases were 7 million tons, down from 8 million in 1985. Exports also dropped to an estimated 5 million tons. The region remained a net importer, but only of 2 million tons, compared with average net purchases of 5.9 million tons in 1981-85. Estimated trade in 1987 should be similar to 1986, with imports ranging between 6.7 and 7 million tons, and exports at about 5 million tons.

High domestic grain production has given the GDR ample stocks and allowed purchasing officials to time imports for the most favorable prices. The large barley purchases of 1983-85, for example, will not be repeated this year because of the ample domestic supply and more favorable feed wheat prices. Corn imports should also remain below historic levels because of the reported price advantage of European Community and Argentine wheat.

Polish wheat imports are expected to be much higher in 1987, however. Purchases from January through March alone were 850,000 tons, nearly twice the year-earlier level. Inexpensive feed wheat from the European Community and U.S. wheat under the Export Enhancement Program account for the import surge. Wheat imports in 1987 should top 2 million tons.

Despite rising hog and poultry numbers, Polish corn imports will remain extremely small this year. Above average grain harvests since 1984 (including the forecasted 1987 crop), large wheat imports, and hard currency shortages, will constrain corn imports.

Hungary and Yugoslavia remained the major exporters. Hungarian wheat exports surged to 2 million tons in 1985 because of exceptional harvests in 1984 and 1985. Shipments in 1986 fell back to an estimated 1.1 million tons. The poor 1986 crop and pessimism over this year's harvest will hold 1987 shipments close to 1 million tons. Corn exports this year could rise to between 300,000 and 400,000 tons, however, if continued poor demand for the country's livestock exports reduces domestic feed use.

Yugoslav corn exports doubled to 1.8 million tons in 1986 and 1987 exports are forecast to remain high at 1.5 to 2 million tons. The Soviet Union is expected to be Yugoslavia's main customer. Yugoslav exports are reportedly nearly all on countertrade terms. Exporters bridge the gap between the world price and the higher domestic price by accepting as payment industrial goods that can be sold on the inflationary Yugoslav market at prices well above those on the world market.

Grain Use Patterns Changing in the GDR

Grain use appears to be undergoing fundamental changes in the GDR. High

domestic production, changes in world grain prices, a sophisticated mixed feed industry, and new developments in grain and non-grain feed varieties are reducing the feed use of corn and raising total grain self-sufficiency.

Feed use of corn has declined since 1983 when corn imports dropped significantly and were replaced by wheat and barley purchases. Officials are also reportedly expanding the use of domestic feeds in rations. One such feed is corn cob mix. The GDR growing season is too short for corn to mature fully, so mixed feed stations are concentrating on processing immature corn into feedstuffs. Costs are reportedly lower than those associated with growing and feeding feed roots and slightly higher than for grain, and daily weight gain for hogs is higher. Feeders are also experimenting with increased feeding of dehulled barley to piglets. No problems have been reported with the new feed mixes. There is no expectation of a quick return to previous corn feeding levels unless domestic wheat and barley output drops, or world corn prices decline relative to barley and feed wheat.

Success in 1986 with a new wheat variety—"dunstweizen"—could also reduce imports of durum wheat. Dunstweizen is a soft wheat, which after processing, replaces durum in pasta making. Grain procurement centers pay a premium for dunstweizen and cultivated area should expand, particularly if yields of traditional wheat varieties remain at or above current levels. Import demand for durum should fall as a consequence.

Lower Production, Little Rise in Imports Expected

Drought in most countries last fall, particularly in the south, delayed sowing, produced uneven germination and set the stage for lower grain production in 1987. Spring field work and plant development was delayed by 2 to 3 weeks because of wet and cold weather. No significant yield damage is forecast because of these events, however. Weather conditions have improved and there were no reports of shortfalls in spring sowing.

More wheat area in Czechoslovakia, the GDR, Poland, and Yugoslavia will leave 1987's wheat area between 10 and 10.2 million hectares. Final harvested area depends heavily on spring plantings in Yugoslavia,

however. The Yugoslav corn market is glutted, and on-farm supplies are high. Wheat area will be up as a response, perhaps as much as 4 percent. In the north, rye area will continue to be replaced by higher yielding wheat, barley and triticale. This shift has been so pronounced in Czechoslovakia that rye imports are likely in 1987.

Total grain production for Eastern Europe in 1987 is forecast between 108 million and 113 million tons. Grain imports will decline as a result, but any change in exports will be small. The good harvests of the last few years and lackluster livestock growth have left sufficient carryover stocks to compensate for a modest decline in production during 1987. (Robert Cummings)

OILSEEDS AND PRODUCTS

Total oilseed production (soybeans, sunflowerseeds, and rapeseed) in 1986 reached 5.9 million tons, up 28 percent from 1985 (table 4). The substantial increase was partly a result of increased area and partly a consequence of more normal weather after the severe drought of 1985. Oilseed and meal imports were up substantially in 1986, resulting from a combination of 1985 production shortfalls and moves in many countries to improve feed rations. Meal consumption should continue its rise in 1987 and meal imports with it, but oilseed imports should fall because of high domestic production in 1986.

Oilseed Production Up 26 Percent

Soybean production, at 746,000 tons, was just short of the 1984 record. The Yugoslav soybean harvest was up 29 percent, from a slightly reduced area, and Romanian production was up 26 percent (table 5). Timely spring planting and summer rains helped the Romanian crop recover from the 1985 low. Soybean production in Bulgaria is also believed to have recovered from the disastrous 37,000-ton crop of 1985.

Sunflowerseed production was up 40 percent in 1986. Significant increases were realized in all the major producing countries. After 4 years of struggling with the fungal disease—*Phomopsis*, Yugoslav researchers finally developed a disease-resistant hybrid.

That achievement, along with favorable producer prices, resulted in a 68-percent increase in area and a 93-percent rise in production. Romanian production recovered from the 1985 drought and reached a record 1 million tons. The Hungarian crop surprised everybody, reaching 855,000 tons, up from 676,000 in 1985, despite severe drought during the season.

The East European rapeseed harvest reached 2.3 million tons, up from 2.0 million in 1985. The Polish crop, at 1.3 million tons, was the highest ever, and high yields were obtained in all the northern countries. The rape yield in the GDR, at 2.7 tons per hectare, was a record. The only disappointment was the Yugoslav crop; low soil moisture in the fall of 1985 resulted in poor germination.

Imports Up; Slight Rise in Meal Consumption

Estimated imports in calendar 1986—approximately 4.4 million tons of meal and 770,000 tons of oilseeds—were well above 1985 levels (table 6). For the most part, the increase made up for 1985 production shortfalls. However, consumption (calculated on the basis of 1985 production and estimated calendar 1986 trade) also rose 3.1 percent, with increases in most countries. Most countries are rebuilding their livestock inventories, resulting in increased demand for

feed concentrates. Due to foreign exchange constraints, however, supplies continue to fall short of needs.

Polish meal consumption increased about 11 percent in 1986, with meal imports rising from 1 million tons in 1985 to about 1.2 million in 1986. But despite the rise in meal use, feed supplies remained inadequate to maintain the large increase in hog numbers. Far more meal will have to be imported in 1987 if the increase in livestock production is to be maintained.

Bulgaria is continuing to boost meal supplies. Soymeal imports were 395,000 tons in 1984, 447,000 tons in 1985 and an estimated 500,000 tons in 1986. Meal consumption jumped sharply in 1984 and 1985 and rose again in 1986. Another increase is projected for 1987, since the domestic crop was larger and imports are expected to be similar to 1986. The Bulgarians have been making major efforts to improve the protein content of their feed. But even so, there are reports of continued tight feed supplies. As hog and poultry inventories fell in 1984 and 1985, and rose only slightly in 1986, it is not clear what the Bulgarians are doing with their large meal supplies.

Consumption in Czechoslovakia and the GDR changed little. Both countries aim only to be self-sufficient in livestock products, so livestock production and therefore meal consumption are stable and change little from year to year. Despite the planned recovery in its livestock sector, Hungary saw a decline in its meal consumption. Domestic crush was only slightly higher than in 1985, and imports fell by almost 100,000 tons. Like Poland, it has seen its import plans curtailed as a result of a worsening financial and trade situation.

Romanian soybean imports in 1986, estimated at 400,000 tons, were about twice the level of 1985. These imports made up for the severe production shortfall of 1985 and also allowed a significant increase in Romanian meal consumption.

Yugoslavia's meal consumption in 1986 was virtually unchanged from 1985. Higher sunflowerseed production in 1985 made up for reduced supplies of soybean meal. Soybean and soymeal imports in 1986 were about the same as in 1985. These results were contrary

Oilseed meal utilization, Eastern Europe, 1981-86 1/						
Item	1981	1982	1983	1984	1985 2/	1986
1,000 tons						
Processing from domestic crops 3/						
Soybean meal	421	346	482	453	541	410
Sunflower meal	626	719	771	685	700	680
Rapeseed meal	651	588	601	717	634	600
Fish meal	82	77	52	52	82	75
Imports						
Oilseed meal	4,764	3,756	3,876	4,080	4,166	4,350
Soybeans 4/	538	442	556	607	403	560
Sunflower-seed 4/	37	37	3	32	43	25
Fish meal	309	325	366	320	349	385
Exports						
Oilseed meal	11	37	16	44	135	95
Apparent meal consumption	7,417	6,253	6,691	6,902	6,783	6,990

1/ Including fish meal. 2/ Preliminary. 3/ Estimated from preceding year's harvest minus exports. 4/ Converted to meal equivalent.

to what was expected at the beginning of the year. Imports of oilseeds and products were placed under a quota, while soybean imports were subject to a heavy tariff. However, later in the year, the tariff was waived, so that soybean imports were higher than expected. Soybean imports will probably fall in 1987, as there are no plans to reduce the tariff again. Meal imports, which are not subject to such a heavy tariff, will likely rise. This increase, combined with anticipated higher domestic output, will mean a further increase in meal supplies in 1987.

Vegetable Oil Consumption Down Slightly.

After a significant rise in 1985, regional vegetable oil consumption in 1986 (also calculated on the basis of calendar year trade) fell slightly. Domestic crush was about the same, imports were down slightly, and exports probably were somewhat higher than in 1985. Yugoslav consumption was down, as imports were curtailed. Vegetable oil imports in Yugoslavia are under quota, and the import duties, which were waived for soybeans in 1986, continued to be in effect for oil because the oil is domestically consumed and does not contribute to exports. On the other hand, Hungary's increase in sunflowerseed production in 1985 contributed to higher domestic oil consumption in 1986, as exports were about the same as in 1985. Poland actually found itself with rather large stocks of rapeseed oil. Demand for its rape oil exports is low because the erucic acid content is higher than in rape oil from other exporters. Moreover, despite the fact that vegetable oil retail prices are lower than for animal fats, domestic demand for the oil is still slack. Domestic consumption is fairly steady in all the northern countries, as animal fats are generally preferred over vegetable.

Little Overall Change Expected in 1987

Eastern Europe as a whole will likely see little change in oilseed production in 1987. Yugoslavia is the only country where an increase is expected. Both soybean and sunflower plantings are planned to increase. Strong domestic demand for vegetable oil has led to price increases, especially for sunflowerseeds. The increased producer price ratio relative to corn is expected to increase interest in oilseeds. On the other hand, Poland will probably see a slight decline in rapeseed

production. About the same area was planted as last year, but some winterkill is likely because of the harsh winter. Hungary has had disease problems with its sunflowerseed crop, so a somewhat smaller area is to be planted this year. Other countries will probably see little change.

Almost all the countries of the region are hoping to increase meal supplies. As a result, imports of oilseed meal are expected to be up in 1987, though still constrained by foreign exchange shortages. Imports of soybeans, however, will probably be down because of high domestic production in 1986 and limits on crushing capacity in most countries. (Nancy Cochrane)

OTHER CROPS

Sugarbeet Production Below Trend

Regional sugarbeet production in 1986, at 45.7 million tons, was 3.5 percent below last year's and below the 1981-85 average. The low output was due to declining planted area. Only Romania reported increases in both area and production.

The GDR has reached self-sufficiency in sugar production at about 882,000 tons, and current policy calls for maintaining beet output by increasing yields on a slowly declining area. As yields increase, production is to be restricted to the areas most suitable for beet growing. In 1986, yields were 34.4 tons per hectare, below a year earlier. The GDR will continue to import large quantities of raw sugar from Cuba for political reasons, and re-export a part of that.

In Poland, beet production of 14.2 million tons was considerably below the 15.6-million-ton average of last 5 years, due to reduced area. Even so sugar production increased from 1.81 million tons (raw equivalent) in 1985 to 1.89 million in 1986 and represented Poland's third highest sugar production. Warm weather last fall made it possible to keep the beets in the field much longer than normal, increasing their sugar content. Also, a new sugar processing plant at Glinojek, with the capacity of 3,000 tons per day, allowed more timely beet processing.

In Yugoslavia beet production last year declined 11 percent from the 1985 level. This

was due to late frosts in April, which reduced harvested area, and dry weather last fall, which shriveled the beets and reduced yields. However the sugar content was still high at 13.2 percent. Yugoslavia imported 300,000 tons of beets from Hungary to be repaid in refined sugar. Thus, the country produced 850,000 tons of refined sugar and was left with large carryover stocks at the end of the year.

The region as a whole is a net sugar importer. Net imports between 1981 and 1985 averaged about half a million tons. Poland, however, is a sugar exporter. Czechoslovakia both exports and imports sugar but on a net basis is close to self-sufficiency. Nearly all sugar imported by the region continues to come from Cuba.

There is no evidence that sugarbeet production in 1987 will deviate significantly from the trends of the last few years. Production is likely to remain around 46 million tons for the region. However, both the refining and storage capacity will continue to improve.

Polish Potato Production Recovers

Potato production in Eastern Europe in 1986 was 65.6 million tons, the highest output of the 1980s. The largest increase was in Poland, where yields last year proved excellent. Total production in Poland went up to 39 million tons, best in the last 4 years, but still below the 1976-80 period. Romania reports a 17-percent improvement in potato production. In the other countries there were few changes over the previous few years.

Eastern Europe has maintained potato production by improving yields while planted area has decreased. The potato industry's most serious problem still is the high winter storage and processing losses--up to 35 percent--and high spoilage rates during harvest.

Potato production in 1987 should improve since most countries have raised potato prices and weather conditions for growth are good. In addition, Poland is stressing improved potato quality and is adding a new processing plant, in cooperation with the Soviet Union.

Cotton Imports Decreasing

All East European countries are cotton importers, including Bulgaria and Yugoslavia, the only producers in the region. Cotton production of the two countries, however, represents less than 3 percent of the region's annual demand of 800,000-850,000 tons. The Soviet Union has traditionally supplied over 60 percent of cotton fiber demanded in the region. The remainder comes from the United States, Egypt, Sudan, Turkey, and China. More recently, however, China's share in East European cotton markets has increased following a series of agreements with several East European countries for 1986-90. These shipments are likely to replace imports from other sources, including the United States.

Such arrangements, however, are often complicated. The Yugoslav 1987 cotton import demand of some 130,000 tons is expected to be filled through barter arrangements with the USSR, Egypt, and China. The deal with China involved 20,000 tons under a barter arrangement contingent upon the acceptability of various goods offered to China in exchange for cotton. However, the Chinese do not want to trade under a global barter arrangement and prefer to deal on the basis of "parallel business contracts." Thus, as this report was written, the deal was still not concluded. (*Francis Urban*)

LIVESTOCK

Eastern Europe's livestock performance during 1986 was uneven. Recovery continued in Poland, and output in Czechoslovakia and the GDR expanded. Livestock came under stress in the southern countries, however, because of drought-reduced feed supplies, rising production costs, and falling foreign demand and prices for meat and live animals. Regional meat production was record large, but egg and milk production declined. Marginal growth is expected this year.

Numbers Decline, Record Meat Production

Inventories of cattle, cows, and hogs declined again during 1986, reflecting the effect of drought in the southern countries and inadequate profit margins for producers (table 7). Poultry numbers for January 1987 are

incomplete, but expansion likely continued, particularly in Poland. Regional cattle numbers dropped 1.6 percent for the third annual decline while cow numbers--off 2.8 percent--have fallen every year since 1981. Substantial estimated declines in Romania's hog inventories more than offset increases in Czechoslovakia, Hungary, Poland, and Yugoslavia, leaving the region with the lowest inventories since 1983.

Meat production was record large in 1986 at 12.5 million tons, nearly 1 percent above 1985 output (table 8). Record production in the GDR and much increased Polish output account for the regional increase. Output declined in Hungary, Romania, and Yugoslavia, however, because of inadequate feed and profitability. Milk and egg output declined 0.8 percent and 1.4 percent, respectively. Declines in Polish output of both commodities account for much of the East European shortfalls.

The GDR remains the most efficient and advanced livestock producer in Eastern Europe. For the first time in the country's history, all increases in meat, milk, and egg output came from higher yields per animal. Milk yields were record at 3,990 kilograms, and daily weight gains for hogs and cattle were up between 2 and 4 percent. Improved feeding efficiency and ample feed supplies are responsible. Production during 1987 will be characterized by slightly lower inventories and quality improvements in livestock products delivered to consumers.

Polish meat output rose for the third straight year, highlighting continued recovery from depressed levels earlier in the 1980's. The recovery was uneven, however, and growth in the dominant hog sector slowed during 1986. Although pork production was up 18 percent last year, there is concern that producer interest in long term hog expansion is waning. Much of the increase in hog inventories during 1986, for example, was reportedly in slaughter animals, while the numbers of piglets and sows declined. Worries about adequate mixed feed supplies are probably responsible. If this perception persists, pork output could stagnate by 1988.

Excellent pasture conditions and favorable beef prices in Poland are responsible for rising beef and veal output but also,

ironically, for declining milk and cow numbers. Poland's cow herd is made up largely of dual purpose animals. Inadequate returns to milk production relative to beef resulted in heavy culling last year. Cow numbers in January 1987 were the lowest since the early 1950's, and milk production declined 4 percent in 1986. Producer prices for milk are up, but improved output is not expected until 1988 because of continuing emphasis on higher meat output and the technical backwardness of Poland's dairy industry.

The livestock situation in the southern countries is critical. Drought and abnormally harsh winters in 1985 and 1986 severely damaged livestock in Bulgaria and Romania. Inadequate supplies of protein feed cut pork and poultry output in Romania, and the lack of official Bulgarian statements on 1986 meat production suggests shortfalls.

Poultry production was the only livestock sector to advance in Hungary last year. Improved foreign demand accounted for the increase. Although January 1987 hog inventories were up nearly 5 percent, pork output declined for the second year in a row in 1986, largely because of slack foreign demand for Hungarian hogs and pork. The dairy sector has been particularly hard hit by drought-reduced forage supplies and an increase in culling because of poor profitability. Modernization is greatly needed in Hungary's dairy industry, but poor profitability and stagnant consumption have constrained investment.

Inflation and high feed costs wreaked havoc with Yugoslavia's livestock sector last year. Meat output and all animal numbers except sheep, poultry, and hogs fell. As in Hungary, strong foreign demand supported expansion of poultry. Continued recovery is forecast for hogs this year, but cattle numbers should again decline. Although feed prices will fall this year because of 1986's record corn crop, foreign demand for Yugoslav live animals and meat is not expected to rise significantly.

Inadequate Use of Mixed Feeds Constrains Output

In every East European country except the GDR, livestock performance is held back by inadequate supplies of protein-rich mixed

feed. The situation is most acute in Romania, where foreign exchange shortages hold oilseed meal imports well below what is needed to support the country's livestock inventories. Domestic crop shortfalls only widen the gap and decrease feeding efficiency.

The protein situation in Hungary and Yugoslavia is gradually improving, however. In January 1986, protein levels in Hungarian feed were increased, but the rise was not sufficient to boost daily weight gains by much. Use of mixed feeds in Yugoslavia should increase this year because of lower domestic corn prices and greater interest in hog fattening by private farms.

Deliveries of commercially mixed feeds in Poland were 5.4 percent lower in 1986 than in 1985 because of inadequate grain and oilseed meal imports. For example, soybean meal supplies for the feed industry were 20 percent below plan. Farmers reacted to the drop in feed deliveries by withholding 1986-crop grain from procurement centers, in effect establishing their own on-farm feed supply. Grain procurement shortfalls will limit 1987 mixed feed production unless there is a substantial increase in grain and oilmeal imports.

Market Supplies Improve in Poland

The level and price of retail meat supplies in Poland is an important determinant of political stability and officials are anxious to remove the meat rationing system that dates from the Solidarity period. Market supplies increased 12 percent last year. Per capita meat consumption rose as result to an estimated 69 kilograms, still well below the 1980 peak of 82 kilograms (table 9).

Subsidized retail prices and rising incomes mean that demand remains well above supply, and rationing will continue at least until 1988, although ration levels should increase. Free sales of meat in designated private farmers' markets continue to expand, however, but the small size and relative high prices of these markets do not make them a viable alternative to rationing.

Meat Exports Fall, USSR Increasing as Customer

Meat and meat product exports dropped in 1986 from 1985's record 1.2 million tons because of slack foreign demand and import restrictions by customers, chiefly the European Community (EC), following the Chernobyl accident in April 1986. Complete data are not available for 1986, but the region's two major exporters—Hungary and Yugoslavia—reported substantial declines last year, except for live and slaughtered poultry.

Hungarian live animal exports, except poultry, dropped between 11 percent for cattle and 42 percent for hogs in 1986. Live poultry and poultry meat sales were up 13 percent and 16 percent, respectively. Poultry exports are forecast to rise another 10 percent this year because of increased Soviet demand.

Yugoslav meat exports during 1986 were reportedly very disappointing, reaching only 67 percent of the planned amount. High domestic production costs, Chernobyl-related restrictions, and low world prices and demand reduced slaughter cattle, baby beef, and canned ham exports from one-third to one-half the 1985 level. Poultry meat exports were the only bright spot, although no firm data on the increase from 1985 sales are available. Yugoslav officials expect another strong poultry export year in 1987.

High domestic production costs in Yugoslavia also spurred record imports of slaughter hogs last year. Imports reportedly reached 185,500 head. Processors sought to preserve pork supplies for the lucrative tourist trade in Yugoslavia by importing lower-priced foreign hogs. Large imports are expected to continue this year.

Poland emerged in sharp contrast to the Hungarian and Yugoslav export performance. Raw meat sales more than doubled to 62,000 tons from 1985 exports. Increased shipments to the Soviet Union accounted for most of the increase. As a result of the Chernobyl accident, the Soviet Union agreed to import up to 12,000 tons of Polish meat exports displaced by the EC import ban. Increased total meat and meat product exports are planned for 1987 as Poland seeks to regain its place on the world export market. Although planned exports of 170,000 tons are unlikely to

be achieved, sales this year should be well over 100,000 tons.

Faced with stagnant export prices and markets, the region's meat exporters are turning increasingly to the Soviet Union. Demand for meat in the USSR runs well above domestic supply and Soviet officials are pressuring East European countries to step up exports to fill the gap. The Soviet Union is attractive to Eastern Europe as a large and stable market, even though the USSR prefers to pay for imports from Eastern Europe through counter-trade agreements rather than expend foreign exchange.

Uneven Growth Expected

Regional livestock production will show only minor growth through 1987. Total meat output is forecast up approximately 1 percent, assuming continued growth in Poland and recovery in Hungary and Yugoslavia. Developments among individual countries will be uneven, however. Productivity per animal will expand again in the GDR, allowing for a slight decline in inventories of all animals except sheep. Meat and livestock product output will rise marginally.

The outlook for Poland is less positive. Poultry production will rise this year, cattle and cow numbers should begin to stabilize, and milk and egg output could recover. However, profits in pork and beef production came under pressure earlier this year when free market feed prices rose without a corresponding increase in the price of piglets and calves. Continuation of this situation and any shortfall in 1987 feed crops will halt livestock's recovery.

Modest recovery is forecast in Yugoslavia. Domestic and foreign demand for poultry is strong and inventories and poultry meat output will be up again this year. Last year's large corn crop will improve profitability for hog producers so higher pork output is expected. (Robert Cummings)

and Yugoslavia suffered deficits worse than in 1985 (Yugoslavia did, however, realize a current account surplus). Hungary, which had realized a surplus in previous years, ended 1986 with a \$2.7 million deficit. Romania and the GDR continued to manage a surplus, but in both cases the surplus was below plan and less than it was in 1985. Only Poland saw an improvement in its trade balance, realizing an overall trade surplus of about \$605 million and a hard currency surplus of \$1,081 million. Unfortunately, the Polish economy was unable to benefit from this surplus, due to Poland's mounting debt.

Most of the countries continued to increase their share of trade with the Soviet bloc and saw an improvement in their ruble trade balances. Yugoslavia realized a large surplus, while the rest, except Poland, were very nearly in balance. Poland suffered a deficit of R468 million (\$1=0.63 rubles), and its ruble debt rose from R5.6 billion to R6.5 billion.

Hard Currency Balances Worsen

The hard currency trade balance deteriorated throughout the region. Several factors were to blame, but the press in almost all the countries put the primary blame on a deterioration in the terms of trade, due in part to falling agricultural prices, but mainly because of declining world oil prices. Approximately one fourth of Eastern Europe's hard currency earnings comes from exports of refined petroleum products. World prices for these have fallen, while at the same time most East European countries are paying above-world prices for Soviet oil. Other factors were overconsumption and poor economic performance at home. Contrary to rhetoric of a year ago, the Chernobyl-related EC ban on imports from East Europe had a relatively small effect on overall export earnings.

Romania's hard currency surplus, though still substantial, was less than in 1984 and 1985, and both exports and imports declined. The primary reason was the fall in oil prices, since exports of petroleum and petroleum products are a large source of Romania's hard currency earnings. But the Romanian press also blamed "deficiencies in certain ministries," which failed to give priority to production for export. In response to the

INTERNATIONAL TRADE AND FINANCE

Overall, Eastern Europe saw a deterioration in its merchandise trade balance in 1986 (table 10). Bulgaria, Czechoslovakia

situation, President Nicolae Ceausescu announced that "a new norm must be set." 50 percent of the annual increase in industrial output must be exported. "Unjustified consumption at home" is no longer acceptable.

Czechoslovak hard currency imports were up 9.7 percent, due to increased imports of capital equipment for modernization projects. Hard currency export earnings were down, again due to the fall in oil prices. Chemical product exports were said to be down by 2 billion crowns (\$1 = 5.55 crowns). Hungary's decline in hard currency exports was blamed not only on falling prices of petroleum and agricultural products, but also on the economic difficulties of OPEC customers. Yugoslavia's hard currency deficit rose from \$1.8 billion in 1985 to \$2.6 billion in 1986. Yugoslavia did manage to increase hard currency exports, but despite the 1986 Foreign Exchange Legislation, the country still could not stem the growth in hard currency imports.

Agricultural Trade Balance Deteriorates

Most of the countries of the region saw a decline in revenues from agricultural exports. Some of the decline can certainly be attributed to the temporary EC ban on agricultural imports from Eastern Europe following the Chernobyl accident. However, Chernobyl-related foreign exchange losses appear to have been considerably less than anticipated. Other problems were lower 1985 production in some countries, declining world prices, and stiff EC import barriers.

Yugoslavia probably experienced the worst setback in the region's agricultural trade. Agricultural exports were only 80 percent of the target in 1986; livestock exports were down more than 30 percent, while exports of fruits and vegetables were also below target. The primary reason was increased difficulties in selling to the EC. Part of this was the result of the EC ban on livestock imports following the Chernobyl accident; one source estimates the loss due to the ban to be about \$25 million. But, more serious in the long term, Yugoslav meat exports to the EC are subject to tariffs approaching 50 percent. In addition, agricultural imports by Yugoslavia were up in 1986. Wheat imports jumped from 58,000 tons in 1985 to 511,000 tons. Imports of soybean

and fish meal, tropical fruit and coffee were also up, as were imports of hogs.

Agricultural exports also declined in Bulgaria and Hungary. As in previous years, Hungary suffered from falling world livestock prices, compounded by drought-induced crop shortfalls. Bulgaria saw a sharp decline in exports of fruit and vegetables. This fall may have been a result of Chernobyl, since 29 percent of Bulgaria's fruit exports and 44 percent of its vegetable exports go to the EC. But another, equally likely, reason is the 1985 drought, which caused production shortfalls in both commodities.

In contrast, Poland's agricultural trade balance improved significantly, reaching a surplus for the first time. Despite the Chernobyl-related ban, exports of livestock products, horticultural products, and rapeseed all increased. Exports of fruits and vegetables to the West were up 30 percent. Agricultural imports also rose, with the biggest increases in rice, tea and spices, and citrus fruit. Imports of oilseed meal were below plan, however, due to hard currency shortages.

Poland's losses resulting from the Chernobyl accident are estimated at \$35-50 million, considerably less than was feared. Part of the reason was that the USSR helped take up the slack by purchasing larger volumes of meat for hard currency. The USSR provided similar assistance to Hungary, doubling its imports of Hungarian meat and paying hard currency for 30 percent of that.

Net Debt Increases; Further Rescheduling by Yugoslavia and Poland

Total net hard currency debt in Eastern Europe rose in 1986 to \$81.0 billion, with increases in most countries (table A in Special Article). While Hungary and Bulgaria initiated new borrowing, the rise in debt was for the most part due to the devaluation of the dollar, which increased the dollar value of debt denominated in other currencies. Yugoslavia and Poland negotiated further reschedulings of their debt, and Romania, too, for the first time since 1983, was forced to seek rescheduling of part of its debt. A special article at the end of this report examines the region's hard currency debt.

Poland saw its net hard currency debt rise to \$31.2 billion, up from \$27.7 million at the end of 1985, and most of its repayment obligations for 1986 and 1987 were rescheduled. The process began with an agreement with its government creditors—the Paris Club—to reschedule \$2.4 billion in March 1986 (see 1986 East Europe Situation and Outlook Report). Then in September, the Polish Government signed an agreement with its commercial creditors covering payments due from the rescheduling agreements signed in 1981–82. In the September agreement, 95 percent of the \$800 million due in 1986, and 80 percent of the \$1.2 billion due in 1987 were rescheduled. After repayment of the remaining 20 percent of the 1987 obligations, three-quarters of that will be immediately returned in the form of new credits.

In July 1986 Poland also concluded a rescheduling agreement with the United States covering \$1.7 billion guaranteed by the U.S. Government that was due in 1982–84. This is the first rescheduling agreement between the two governments since the sanctions imposed in 1981. Poland came to an agreement with the United Kingdom as well, rescheduling \$119 million due in 1985. This move clears the way for \$20 million in new credit offered by the UK, which was contingent on bringing outstanding arrears up to date and reaching the March 1986 agreement with the Paris Club.

Yugoslavia repaid \$4.32 billion of the \$5.97 billion due in 1986, refinancing the rest, but still made little progress in reducing the principal on its debt. The main refinancing agreement concluded so far in 1987 has been the second stage of the multiyear rescheduling agreement reached with the Paris Club in 1986. This second stage covers \$475 million due between May 16, 1987, and May 31, 1988. Yugoslavia, however, owes \$5.5 billion in total repayments during 1987, and with its worsening trade balance, will have increasing difficulties meeting its obligations.

Romania, despite its priority on debt repayment, found itself unable to meet all obligations in 1986, due to export shortfalls and delays of some Middle Eastern governments in paying their debt obligations to Romania. In July 1986 its commercial creditors agreed to reschedule \$880 million due in 1986 and 1987 under the rescheduling agreements of 1982 and 1983. Nevertheless,

President Ceausescu renewed his pledge to pay off the entire debt by 1990.

Hungary initiated a large amount of new borrowing in 1986, increasing its net debt to \$12 billion. Most of this new borrowing was from Japanese banks eager to invest their money. This new lending was reported to be on quite favorable terms, and Hungary used much of this money to pay off earlier, more expensive debt.

Outlook Not Encouraging

The 1987 plans in all the East European countries call for an improvement in the trade balance. Hungary's plan, for example, calls for a \$100–200 million surplus; exports are to increase 4 percent, 5 percent in hard currency markets. Hungary, Poland, and Yugoslavia have devalued their currencies in hope of expanding exports. However, first-quarter results in many countries have been disappointing, and little improvement if any can be expected in 1987. The 1986–87 winter was severe in many of the countries, lowering industrial production and creating pressure for higher fuel imports. Eastern Europe continues to have problems with terms of trade. World oil prices are rising, but probably not enough to effect a significant improvement in Eastern Europe's terms of trade. To the extent that 1986 agricultural production improved from 1985, agricultural exports can be expected to expand, but world prices will remain low.

(Nancy Cochrane)

AGRICULTURAL TRADE WITH THE UNITED STATES

U.S. calendar 1986 agricultural exports to Eastern Europe declined further to \$433 million, down 10 percent from 1985 (table 11). The main reason was a 31-percent drop in animal product exports, with sales of cattle hides down a third in value (table 12). Coarse grain exports also fell, and cotton exports fell to almost nothing. Exports of other products were up. Wheat exports, in particular, rose because of the Export Enhancement Program (EEP). However, prices of these commodities, particularly wheat, fell so much that the revenue did not offset the declines in animal product exports.

U.S. Export Enhancement Program initiatives to Eastern Europe

Country	Commodity	Amount (tons)	Date	Status as of 6/11/87
Poland	Wheat	500,000	1/7/87	Completed
	Barley or sorghum	200,000	12/31/86	Sold 137,000 tons sorghum
Romania	Barley	200,000	9/4/86	Sold 125,000 tons
	Wheat	250,000	12/23/86	No activity
Yugoslavia	Wheat	200,000	4/10/86	Completed
	Wheat	200,000	6/24/86	Completed
	Wheat	500,000	10/7/86	Sold 213,050 tons

Source: USDA/ Foreign Agricultural Service.

U.S. agricultural imports from Eastern Europe reached \$305 million, up from \$263 million in 1985 and the highest since 1980. Canned meat imports alone came to \$186 million, up 17 percent (table 13). Imports of other commodities rose also: tobacco from \$44 million in 1985 to \$46 million in 1986, canned vegetables from \$7 to \$14 million, fresh and canned fruit from \$7 to \$11 million. Except for tobacco, these rises were due to substantial increases in unit value; the quantity imported changed little.

Total U.S. exports to Eastern Europe fell only slightly, from \$1.4 to \$1.2 billion, while total imports, at \$2.1 billion, were virtually the same as in 1985.

EEP Boosts Wheat Sales

During 1986, EEP initiatives were extended to Poland, Romania and Yugoslavia covering wheat, barley and sorghum. EEP was introduced in an attempt to win back traditional export markets lost in recent years to lower-priced competitors. Under an EEP initiative, a U.S. exporter negotiates a sale with a foreign buyer at a price competitive with world levels and applies to the Commodity Credit Corporation (CCC) for a bonus from CCC stocks to make up the difference between the sale and U.S. market price. If CCC approves the terms of the sale, the bonus is granted in generic certificates, which the exporter may exchange for any CCC commodity.

The first EEP initiative for Eastern Europe was announced for Yugoslavia in April 1986. Total initiatives and sales under EEP are shown in the table below. The result was

423,000 tons of wheat exports in 1986, and at least 500,000 tons more will be exported in 1987. However, the value increase in wheat exports will not be so dramatic. The average unit value of 1986 wheat exports to Eastern Europe was \$95 a ton, down from \$144 in 1985, and the average unit value of wheat sold in January-April 1987 was \$70 a ton.

Soybean, Meal Exports Up, Coarse Grains, Cotton Down

U.S. exports of coarse grains to Eastern Europe fell 6 percent in volume, but 16 percent in value. A 22-percent value decline in corn exports was partially offset by 111,000 tons of barley sold under the EEP. Corn exports to the GDR fell by around 100,000 tons. The GDR has continued to enjoy bumper harvests, and under its agreement with Canada, it has been able to meet its import needs with cheaper feed wheat and barley. Exports to Romania and Bulgaria were high for a second year due to 1985 drought-induced production shortfalls.

U.S. exports of soybeans and soymeal were up 23 and 29 percent in value in 1986, but were well below 1982-84 levels. U.S. soymeal exports have suffered from foreign exchange shortages in Eastern Europe and competition from Latin American suppliers who are more amenable to countertrade. While the United States continues to be the largest supplier of soybeans to Eastern Europe, these exports are falling because of improved production in Romania and Yugoslavia, and the loss of Poland as a customer. Poland's crushing capacity has been taken up completely with its large rapeseed harvests of recent years.

CCC Credit announced and used in fiscal 1986 and 1987

Commodity	Yugoslavia			Hungary		
	FY 86		FY 87	FY 86		FY 87
	Announced	Used	Announced	Announced	Used	Announced
Million U.S. dollars						
Cotton	60.0	1.5	41.0	4.75	0	2.9
Protein meal	10.0	4.5	10.0	28.50	28.5	16.0
Oilseeds	--	--	10.0	--	--	--
Soy products for human consumption	--	--	--	2.0	0.3	1.0
Hides & skins	40.0	9.0	15.0	--	--	--
Livestock breeding materials	--	--	--	1.25	1.25	2.6
Shelled almonds	--	--	--	0.5	0	0.5
Total	110.0	15.0	76.0	37.0	30.05	23.0

Source: USDA/ Foreign Agriculture Service.

U.S. cotton exports fell to \$8 million in 1986 from \$48 million in 1985. Contrary to expectations at the beginning of the year, the average U.S. export price rose 23 percent, and the United States' main customer, Yugoslavia, turned increasingly to countertrade arrangements with the USSR, China, and Egypt for its cotton.

Use of CCC Credits, Food Aid Down

Use of fiscal 1986 Commodity Credit Corporation (CCC) credit guarantees was at an alltime low. Of the \$110 million available to it, Yugoslavia used only \$15 million, even though its fiscal 1986 imports from the United States were the same a year earlier.

Importers have been reluctant to take on new credit because the continuing devaluation of the dinar makes repayment difficult. Hungary used \$31 of the \$37 million available to it, failing to use any of the credit available for cotton.

CCC credits approved for fiscal 1987 total \$76 million for Yugoslavia and \$23 million for Hungary. As of June 19, 1987, Hungary had used \$9.1 million, \$8 million of that for protein meal. Hungary will likely use most of the credit approved for it, although it may not buy any U.S. cotton. Yugoslavia had used only \$10.3 million of the available credit, all of it for cotton and hides. The Yugoslavs may use some of the credit allocated for soybeans, since the tariffs on soybean imports are being waived in 1987 for imports covered by commodity credit programs. Imports of U.S. cattle hides, however, are likely to remain low, despite the availability of credit.

As in previous years, the United States provided food aid to the Polish people under Title II of P.L. 480 and Section 416 of the Overseas Dairy Donation Program. According to preliminary data, fiscal 1986 shipments under Title II included 2,212 tons of rice and 2,729 tons of soybean oil. Section 416 shipments included 7,379 tons of cheese, 1,677 tons of nonfat dry milk (in response to the Chernobyl accident), 750 tons of anhydrous milk fat, and 1,603 tons of butter. For fiscal 1987, the Title II program level is the same as last year, but nothing has been approved under Section 416.

U.S. Sanctions Against Poland Lifted

On February 19, 1987, President Reagan lifted the economic sanctions imposed on Poland in 1981 after the imposition of martial law. These sanctions denied Poland Most Favored Nation (MFN) status and prohibited U.S. Government guaranteed credits to Poland. The lifting of the sanctions followed a visit to Poland by Deputy Secretary of State John Whitehead, during which he determined that the Polish Government had made substantial improvements in human rights. The immediate impact of this action, however, will be slight. The poor quality of Polish goods and Poland's financial difficulties will prevent any significant increase in trade, and western lenders do not regard Poland as a very good credit risk at present.

Little Change Expected in 1987

U.S. agricultural exports to Eastern Europe in fiscal 1987 are projected at around

\$500 million, up from \$447 million a year earlier. Wheat exports will be higher thanks to EEP and continued below-plan production in Yugoslavia. However, wheat prices have dropped so much that these exports will not cause revenues to rise significantly.

Furthermore, it is not clear that the United States will be able to maintain this market without EEP.

Exports of most other products are likely to decline. Bulgaria is continuing to buy U.S. corn, but at a lower level than previous years. Romania, however, experienced better production in 1986 and is unlikely to buy any corn. U.S. coarse grain exports to the GDR during January–May 1987 were ahead of the same period last year, but will not offset the lack of sales to the rest of the region. The modest recovery projected in most East European livestock sectors will mean higher exports of soybean meal, but these will be offset by lower soybean exports. Exports of cotton and hides will continue to be down.
(Nancy Cochrane)

OUTLOOK

Growth patterns in Eastern Europe during 1987 will widen the region's economic disparities. At one extreme, economic expansion continues in the GDR and Czechoslovakia, while Poland, Romania, and Yugoslavia strive to regain the production and consumption levels of the early 1980's. The debt burden remains the major impediment to sustained growth because capital is directed towards debt servicing instead of investment, particularly in Poland, Romania, and Yugoslavia.

Inefficient use of inputs also contributes to slow growth. Hungarian planners, for example, have tried for several years to increase efficiency by making economic decisionmaking at the enterprise and farm level responsive to world market conditions. Officials admitted late in 1986 that this has not occurred and efforts this year are again focused on the economy's structure and operation rather than on expansion. Investment for example, is to be little changed from 1986, restrictions on imports and new foreign debt seem likely because of last year's trade deficit, and strenuous efforts to raise farm exports will continue.

The Polish economy remains captive to a huge foreign debt and the dislocations of the Solidarity and martial law periods. Plans for 1987 focus on regaining lost ground, particularly improving food and consumer supplies. New growth has been postponed. The Government is, however, planning a major investment effort in rural water works and environmental protection. Investment in both areas is slated to rise 16 percent and 21 percent, respectively. These levels will likely not be achieved given inadequate inputs. However, the plans signal a new commitment to address major barriers to the long-term development of Polish agriculture.

Little Growth in Agriculture Expected

Total agricultural output in 1987 will be at best slightly above 1986 output. The good farm performance of last year plus an extremely cold 1986/87 winter will make it difficult for the region to realize another year of significant growth. Only Hungary is planning a substantial increase. The planned increase of 4.5 to 5.5 percent is optimistic, however, given the poor financial position of many Hungarian farms. Three years of drought caused many farm insolvencies despite government assistance. No turnaround in the financial situation is expected this year.

Grain. Drought in most countries last fall, particularly in the south, delayed grain sowing and produced uneven germination, while wet and cold weather delayed 1987 spring field work and plant development by 2 to 3 weeks. Only minor yield declines are expected from these events, however. Weather conditions have improved from the spring, and no sowing shortfalls were reported. Regional wheat area is expected to be larger this year because of increased area in the northern countries and Yugoslavia, so wheat production might increase.

Total grain production in 1987 is forecast between 108 million and 113 million tons. Grain exports will decline slightly as a result in 1987/88, but any change in imports will be small. The good harvests of the last few years and lackluster livestock growth have left sufficient carryover stocks to cover a modest decline in production during 1987.

Oilseeds. Eastern Europe as a whole will likely see little change in oilseed production in

1987. Yugoslavia is the only country where an increase is expected. On the other hand, Poland will probably see a slight decline in rapeseed production because of higher-than-average winterkill, and a somewhat smaller sunflowerseed area in Hungary is expected because of disease problems. Almost all the countries of the region are hoping to increase meal supplies. As a result, imports of oilseed meal are expected to be up in 1987, though still constrained by foreign exchange shortages. Imports of soybeans, however, will probably be down because of high domestic production in 1986 and limits on crushing capacity in most countries.

Sugarbeets & Potatoes. There is no evidence that sugarbeet production in 1987 will be significantly different from the last few years. Regional production is likely to remain around 46 million tons. Potato production should improve since most countries raised potato prices, and weather conditions for growth are good. In addition, Poland is stressing an improvement in the quality of its potatoes and is adding a new processing plant, in cooperation with the Soviet Union.

Livestock. The severe winter reportedly caused significant livestock losses in Bulgaria and Poland. Damage likely occurred throughout the remainder of the region as well. This setback, plus the usual tight feed supplies will allow for only minor growth in regional livestock production through 1987. Total meat output is forecast up approximately 1 percent, assuming continued growth in Poland and recovery in Hungary and Yugoslavia.

Trade Balance Outlook Unfavorable, U. S. Farm Exports To Rise

The 1987 plans in all the East European countries call for an improvement in trade balances. With this in view, Hungary, Poland and Yugoslavia have devalued their currencies in hope of expanding exports. However,

first-quarter results in many countries were disappointing, and little improvement if any can be expected in 1987. To the extent that 1986 agricultural production improved from 1985, agricultural exports can be expected to expand, but world prices will remain low.

Foreign trade will be increasingly oriented towards the Soviet Union and other CEMA nations. Soviet officials are pushing closer trade ties as a way to save on hard currency imports from the West and to reduce the country's large trade surpluses with Eastern Europe. The ultimate aim is to establish direct trading and production specialization links between enterprises across borders.

Eastern Europe is receptive to the Soviet position concerning conservation of foreign exchange, but serious reservations will cause the region to drag its feet on full implementation. Given the choice and adequate hard currency supplies, officials in all East European countries would deepen trade ties with the West. Official media commentaries in Poland, for example, complain that Polish enterprises are not interested in production specialization, and they export only to other CEMA nations those goods that cannot be sold in the West or on the domestic market. Despite Soviet wishes, any recovery in Eastern Europe's trade and financial situation will soon lead to a recovery in trade with the West.

U.S. agricultural exports to Eastern Europe in fiscal 1987 are projected at \$505 million, up from \$447 million a year earlier. Wheat exports will be higher thanks to the Export Enhancement Program and continued below-plan production in Yugoslavia. However, the price has dropped so much that increased exports will not result in a significant revenue increase. Furthermore, in the longer term it is not clear that the United States will be able to maintain this market without EEP. Exports of most other products are likely to decline except for soybean meal. (Robert Cummings)

EAST EUROPEAN EXTERNAL DEBT: ITS EFFECTS ON PRODUCTION AND TRADE PROSPECTS

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Introduction

At the end of 1986 total foreign debt of the seven East European countries stood at over \$98 billion. This represented about 10 percent of the total foreign debt of the developing and centrally planned countries, for a region with less than 3 percent of world's population. Only the most indebted Latin America countries carried a heavier debt burden. Repayment of this debt substantially limits development possibilities by reducing resources available for investment, affecting the region's trade patterns, and depressing the standard of living. This is a problem that is likely to persist well into the 1990's.

Debt Size, Structure, and Burden

The East European gross hard currency debt grew from a manageable \$8.2 billion in

1971 to a high of \$85.8 billion in 1981. It declined some through 1984 and then rose again, posing new dangers to the stability of the region's financial system. Not all countries, however, are equally affected. Poland carries the heaviest burden, with the gross debt in December 1986 reaching \$33.5 billion, over a third of the region's total (table A). In addition, Poland's debt to other CEMA countries—principally the Soviet Union—representing trade credits provided in the 1980's, amounted to 6.5 convertible roubles (about \$9.8 billion at the official rate of exchange).

Other countries with large debts and servicing difficulties include Yugoslavia, Romania, and Hungary. Their debt-service ratio*/ in 1985 ranged from the crushing 109 percent in Poland to 26 percent in Romania, Bulgaria, Czechoslovakia, and the GDR,

Table A—Gross and net hard currency debt of Eastern Europe 1971 and 1980-86

		1971	1980	1981	1982	1983	1984	1985	1986
Billion U.S. dollars 1/									
Bulgaria	G	0.7	3.5	3.1	2.8	2.6	2.2	3.2	4.7
	N	N.A.	2.8	2.2	1.7	1.4	0.8	0.9	3.4
Czechoslovakia	G	0.5	4.9	4.5	4.0	3.7	3.6	3.8	4.4
	N	N.A.	3.7	3.4	3.3	2.8	2.6	2.8	3.2
GDR	G	1.4	14.1	14.9	13.0	12.7	12.2	14.0	15.3
	N	N.A.	11.6	12.3	10.7	9.0	7.6	7.4	7.8
Hungary	G	1.1	9.1	8.7	7.7	8.3	8.8	11.8	15.1
	N	N.A.	5.5	7.0	6.6	6.8	6.7	8.8	12.0
Poland	G	1.1	25.0	25.4	24.8	27.5	26.8	30.2	33.5
	N	N.A.	24.4	24.7	23.8	26.4	25.3	28.6	31.2
Romania	G	1.2	9.4	10.2	9.8	8.9	7.1	6.6	6.0
	N	N.A.	9.1	9.8	9.4	8.8	6.4	6.4	5.5
Yugoslavia	G	3.2	17.4	19.0	18.5	18.8	18.8	19.2	19.4
	N	N.A.	14.0	16.3	16.8	17.6	17.7	18.1	17.9
TOTAL	G	8.2	83.4	85.8	80.6	82.5	79.5	88.8	98.4
	N	N.A.	71.1	75.7	72.3	72.8	67.1	73.0	81.0

1/ At end of year. G = Gross, N = Net, N.A. = Not Available

Sources: References (3) and (5) at the end of article and various U.S. Government agency estimates.

* See Table B for definition of terms.

Table B--Comparative burden of net hard currency debt
of Eastern Europe, 1985

	Debt per capita	Debt service ratio 2/	Ratio of debt to exports 3/
	U.S. Dollars 1/	Percent	Percent
Bulgaria	100	14	76
Czechoslovakia	181	31	74
GDR	443	26	144
Hungary	827	70	259
Poland	768	109	506
Romania	282	26	96
Yugoslavia	783	45	81

1/ Net debt divided by mid-year population. 2/ The ratio of interest plus debt repayments to the sum of hard-currency non-socialist merchandise exports and the net balance of invisibles. 3/ Gross debt to hard-currency non-socialist exports.

Source: (3)

though heavily indebted at one time or another during the last decade, have reduced their debt burden considerably (table B).

About 83 percent of the region's hard currency debt is long term while the remaining 17 percent is made up of short-term debt of up to 2 years. Successive reschedulings are stretching the repayment period over a longer period in Poland and Yugoslavia. Romania, however, adopted a policy of forced repayment, planning to pay off its debt by 1990, at the expense of the population's standard of living and the state of its physical capital.

Commercial banks hold about 83 percent of the debt in Bulgaria and Hungary, and nearly 75 percent in Czechoslovakia and the GDR. The rest of the countries' debt is made up of official government or government-guaranteed loans.

In the case of Poland, about 64 percent of the debt is official and the rest commercial, while in Romania and Yugoslavia the creditors are more evenly distributed among private banks, foreign governments, the IMF, and the World Bank.

The creditor nations and banks are predominantly in Western Europe, to whom the seven East European countries owe nearly 60 percent of the debt. In this group, the Federal Republic of Germany is most exposed, holding an estimated 20 percent. The other exposed countries are France, Austria, Great Britain,

and Italy. The U.S. Government and private bank exposure in the region is also large—about 15 percent of the total debt. The remaining 25 percent is owed mainly to Japan, Canada, and other developed and middle income countries. Half of the region's debt is denominated in U.S. dollars, nearly 20 percent in German marks, and about 10 percent in Swiss francs.

Debt Origin and Development

The roots of the current debt crisis in East Europe lie in both internal and external factors. The internal factors are based in the economic systems and policies of the countries concerned. The external factors are the petroleum crises of 1973-74 and 1979-81, the sharp increase in interest rates starting in 1979, the world recession of the early 1980's and, more recently, the fall in the value of the dollar.

Internal Factors. Despite some shifts since the 1950's, Eastern European economies generally follow a highly centralized system of planning and management transplanted from the Soviet Union. During the 1950's and 1960's, the countries adopted a policy of forced industrialization that relied on domestic savings and intra-bloc bilateral credits to finance ambitious investment projects. The economic development adopted at that time aimed mainly at import substitution of manufactured goods rather than development of an industrial base that is competitive by world market standards.

Foreign trade was directed to the intra-bloc market at the expense of prewar links with world economy. The Soviet Union became the main supplier of raw materials and capital investment goods. This policy led to the creation in all Eastern European countries of similar industrial bases producing goods that could not compete with Western goods or be sold profitably on Western markets.

In a broader perspective, the policy of import substitution and creation of an industrial base to satisfy domestic markets was also adopted by newly industrialized countries (NIC's) in Latin America. These policies contrasted sharply with the outward-oriented strategies of the Pacific Rim NIC's such as South Korea, Taiwan, and Singapore, which aimed at export promotion and the creation of industrial bases competitive by world market standards.

However, the rapid development undertaken by Eastern Europe in the postwar decades created a strong import demand, particularly for high-quality machinery and equipment, available only in Western countries. Relying on central plans instead of prices, decisionmakers were not concerned about prices and financial risks. The drive for imports was not supported by a similar push for exports, so that chronic hard currency trade deficits resulted as import restrictions were liberalized, and hard currency debts began to accumulate. The high growth targets of the 1970's, "detente," and the hunger for Western technology to upgrade the quality of domestic production speeded up the process. The Western credits, however, were not used to implement a more outward-oriented development strategy or increase production of exportable goods. Rather, borrowing for general balance of payments support and consumption (imports of feeds to improve livestock production, for example) increased.

External factors. These basically consisted of the oil price shocks of 1973-74 and 1979-81, the rapid increase in interest rates on international markets starting in 1979, economic recession in the West in the early 1980's, and the fall in the value of the dollar in the same period.

Following sharp oil price increases, the oil-exporting countries deposited large sums of money in Western commercial banks. This

money needed to be recycled. The low and sometimes negative real interest rates resulting from such conditions made external borrowing very attractive to East European countries as a way to finance continued economic and industrial growth. The creditor banks, however, had no control, or were unwilling to assume control, over the way in which the loans were spent. The result in Eastern Europe, as well as in Latin America, was mounting debt without creation of an industrial base to provide for debt repayment.

By 1979, world credit conditions began to tighten as developed countries introduced restrictive monetary policies. Interest rates rose sharply and the amount of credit available to developing and East European nations was sharply curtailed as economic performance of most countries in the regions proved totally inadequate to support the existing levels of debt. Poland encountered debt repayment difficulties as early as 1978 and, as suppliers imposed a credit squeeze on Eastern Europe, a full-scale debt crisis was precipitated. Deterioration in the terms of trade vis-a-vis Western countries and the Soviet Union and the global recession in the early 1980's, which severely contracted the market for industrial goods produced in Eastern Europe, compounded the problems. By then, the region's debt service burden became overwhelming, further exacerbated by deteriorating East-West relations due to the Soviet invasion of Afghanistan in the winter of 1979 and the imposition of the martial law in Poland. Only Bulgaria and Czechoslovakia avoided a severe financial crisis. Under these circumstances Poland and Romania, and eventually Yugoslavia, were forced to reschedule the debt repayments. The falling value of the dollar against the majority of Western currencies after 1985 increased the dollar value of non-dollar liabilities of the region.

Adjustment Policies

The oil shock of 1973-74 was a windfall for the Soviet Union and Romania, the oil producers, but adversely affected the balance of payments of other countries in the region. It created a strong demand for borrowed funds to support the balance of payments and finance imports. However, the East European countries failed to take appropriate adjustment measures. Their domestic

Table C--Gross capital investment growth in Eastern Europe, 1971-86

	1971-75	1976-80	1981	1982	1983	1984	1985	1986
	Percent							
Bulgaria	12.9	0.1	14.8	-3.3	-3.6	2.8	1.9	8.9
Czechoslovakia	8.4	1.4	-21.7	-3.6	-7.2	1.5	1.3	3.0
GDR	2.9	3.0	-3.4	-19.9	-1.9	3.3	2.3	5.0
Hungary	8.1	-2.0	-8.6	-12.4	-20.4	-0.4	0.2	5.1
Poland	18.1	-11.8	-27.6	-6.6	4.9	5.0	3.5	N.A.
Romania	N.A.	6.6	-22.1	-4.3	2.0	3.4	1.6	1.2
Yugoslavia	5.5	5.4	0.5	-4.0	5.7	-9.4	-10.0	N.A.

N.A. = Not Available.

Sources: (1) and country statistical yearbooks.

Table D--National income (net material product) growth in Eastern Europe, 1971-86

	1971-75	1976-80	1981	1982	1983	1984	1985	1986
	Percent							
Bulgaria	7.8	6.1	5.0	4.2	3.0	4.6	1.8	5.5
Czechoslovakia	5.7	3.7	-0.1	0.2	2.4	3.3	3.3	3.4
GDR	5.4	4.1	4.8	2.6	4.4	5.5	4.8	4.3
Hungary	6.2	3.2	2.5	2.6	0.3	2.7	-0.5	0.5
Poland	9.8	1.2	1/	-12.0	-5.5	6.0	5.5	3.4
Romania	11.2	7.3	2.2	2.7	3.4	7.7	5.9	7.3
Yugoslavia	5.9	5.6	1.4	0.5	-1.3	1.7	0.5	3.6

1/ Rates for 1976-80 are: 6.8, 5.0, 2.8, -2.0, and -6.0 respectively.

Sources: (1) and country statistical yearbooks.

economic policies remained largely unchanged. In effect, they continued the import-led economic growth policies, piling up hard currency debts, without successfully assimilating Western technology that had been expected to help correct their gross imbalances.

The 1979-81 period produced two simultaneous shocks: the second and more radical increase in oil prices, and a full-scale debt crisis, first in Poland and then in Romania and Yugoslavia. To a varying degree the other East European countries also came under debt repayment stress. In response, the affected countries introduced a number of austerity policies, including severe restrictions on hard currency imports, promotion of exports at the expense of domestic consumption, and a substantial reduction of domestic investments. Starting as early as 1978, investment in fixed capital fell substantially in all countries in the region and investment growth was negative at one time or another between 1978 and 1985. At the same time, national income growth stagnated. Poland, Romania, Yugoslavia, and Hungary were most affected (tables C and D).

The austerity policies led to a substantial increase in East European exports, particularly to hard currency areas, and reduced imports. In the case of agricultural products, the countries managed to reduce imports from \$12.4 billion in 1980 to \$8.0 billion in 1985. However, agricultural exports declined from the high of \$9.5 billion in 1979 to \$6.7 billion in 1985. Apparently, except for Romania, which has pursued policies of extreme austerity to payoff its debt by 1990, other countries were unwilling to allow the standard of living, and the food situation, decline more than it had.

In any case, total gross hard currency debt declined from \$85.8 billion in 1981 to \$79.5 billion by 1984 and then, as a result of the U.S. dollar depreciation and new borrowings, began to increase again. By 1986, the region's debt jumped nearly \$20 billion, due to new borrowings by Bulgaria and Hungary, the deteriorating trade position of the region, and the depreciation of the U.S. dollar against the majority of western currencies. Polish debt, however, grew steadily over the period, the entire increase due to accumulating interest on the unpaid

portion of its debt. Most East European economies have achieved a measure of economic recovery since 1983. The main factors in this were good performance of agriculture, due to improved efficiency and favorable weather, and a greater reliance on domestic energy sources as the countries reduced oil imports from the Soviet Union and the Middle East.

Effects of Debts On Economic Growth and Trade

The debt servicing burden has seriously affected most East European countries by taking away resources from domestic consumption and investment. In effect, the net financing flow became negative in Bulgaria starting in 1979, in Czechoslovakia, Hungary, Poland, and Romania in 1981; and in Yugoslavia in 1982 (1, Vol. 2). Domestic capital investments fell dramatically in the late 1970's and their growth rates between 1981 and 1983 were negative in most countries. Investment growth was still negative in Yugoslavia and minimal in Hungary through 1985. Also, except in Bulgaria and the GDR, the growth of national income was sluggish or negative between 1981 and 1984, and the Hungarian economy was still in a recession in 1986 (tables C and D). The standard of living fell most drastically in Poland, where national income in 1985 was 12 percent below that of 1979.

The most visible effect of the debt crisis was on the region's foreign trade. Total imports, which grew rapidly through 1980, declined sharply through 1983 and growth has been sluggish at best ever since, while exports were promoted vigorously to earn foreign exchange to service debt. The policy of constraining imports and promoting exports has been most vigorously applied in Romania, Poland, and the GDR (See Appendix table 10). The region as a whole suffered a negative trade balance of nearly \$11.8 billion in 1979, but managed to transform it into a positive balance of some \$5.7 billion by 1984. Effects of the foreign debt crisis on U.S. trade with the region have been particularly serious. U.S. exports to the region fell from an average of \$3.3 billion in 1976-80 to \$1.2 billion in 1986 while U.S. imports from the region

increased from \$1.4 billion to \$2.1 billion (Appendix tables 12 and 13).

Conclusion

Though the East European economies have begun to recover from the worst effects of the debt crisis, the debt servicing burden will remain heavy for a number of countries well beyond this decade. Poland will remain most affected, followed by Yugoslavia and Hungary. Romania may be able to pay off its debt in the next few years, but the cost will be exorbitant in terms of living standards and economic infrastructure.

Because of the region's limited resource base, adjustment policies have placed the burden of debt servicing on investment and arrested the modernization and expansion of the already outdated industrial bases. As a result, the technological gap between East and West has widened, particularly in the more sophisticated areas of electronics, computers, and biotechnology and further eroded the region's position on world markets. In Poland, Romania, and Czechoslovakia, in particular, failure to replace obsolete or worn-out equipment has reached a particularly dangerous level. Also, foreign currency constraints are forcing the region into closer trading ties with the Soviet Union at the expense of links with the West.

To cope with the situation, East European countries increasingly favor more outward-orientated policies, but their stringent foreign exchange constraints limit import liberalization, while shortages of capital limit industrial investment in export industries. At the same time, the governments are reexamining their development strategies and show a new interest in the reform of economic structure, particularly in Hungary, Poland, Yugoslavia, and Bulgaria. While in the past improvements in the financial situation were made by limiting domestic demand, future growth will have to be made by expansion of the supply of goods, improvement of the quality of manufactures, more efficient use of resources, and an energetic promotion of exports to the West.

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Table 1. Production of grains, Eastern Europe, 1976-80 and 1981-85 averages and 1983-86 annual 1/

Commodity and year	Bulgaria	Czecho-slovakia	GDR	Hungary 2/	Poland	Romania 3/	Yugoslavia	Total Eastern Europe
1,000 tons								
Wheat								
1976-80	3,513	4,949	2,998	5,186	5,089	6,104	5,306	33,145
1981-85	4,173	5,389	3,414	6,066	5,263	6,038	5,089	35,433
1983	3,608	5,820	3,550	5,985	5,165	5,200	5,525	34,853
1984	4,836	6,170	3,903	7,392	6,010	7,578	5,595	41,484
1985	3,067	6,023	3,936	6,578	6,461	5,662	4,839	36,566
1986	(3,750)	5,600	4,175	5,800	7,500	7,500	(4,776)	(39,101)
Rye								
1976-80	20	578	1,748	135	6,474	(50)	87	(9,092)
1981-85	37	642	2,205	146	8,089	(47)	80	(11,245)
1983	31	751	2,092	138	8,780	(40)	83	(11,915)
1984	37	710	2,510	193	9,540	(50)	81	(13,121)
1985	49	620	2,505	166	7,600	(50)	77	(11,067)
1986	(50)	500	2,430	165	7,100	(50)	74	(10,369)
Barley								
1976-80	1,532	3,386	3,715	772	3,560	1,981	664	15,610
1981-85	1,193	3,507	3,983	1,010	3,618	2,423	700	16,435
1983	1,047	3,276	3,882	1,013	3,262	2,193	661	15,334
1984	1,279	3,677	4,138	1,220	3,555	2,448	748	17,065
1985	800	3,538	4,366	1,046	4,086	1,850	704	16,390
1986	(1,050)	3,300	4,290	840	4,400	2,200	(704)	(16,784)
Oats								
1976-80	70	423	525	90	2,434	56	298	3,896
1981-85	42	471	678	141	2,600	86	267	4,285
1983	30	475	498	124	2,377	80	248	3,832
1984	25	480	700	156	2,604	94	256	4,315
1985	41	474	746	133	2,682	102	252	4,430
1986	(30)	395	655	115	2,500	100	(260)	(4,055)
Corn								
1976-80	2,652	724	2	6,374	165	11,097	9,192	30,206
1981-85	2,655	885	6	6,977	65	12,754	10,568	33,910
1983	3,115	722	1	6,426	64	11,982	10,719	33,029
1984	2,994	940	12	6,686	57	13,274	11,293	35,256
1985	1,350	1,114	14	6,818	69	(14,000)	9,896	33,261
1986	(2,250)	985	30	7,200	168	15,550	(12,526)	(38,709)
Rice (rough)								
1976-80	62	--	--	31	--	48	34	175
1981-85	68	--	--	41	--	85	39	233
1983	74	--	--	47	--	84	40	245
1984	61	--	--	33	--	110	36	240
1985	55	--	--	38	--	138	36	267
1986	(60)	--	--	40	--	150	(40)	(290)
Other grains 4/								
1976-80	--	--	49	45	1,773	47	7	1,921
1981-85	--	--	107	40	2,589	19	4	2,760
1983	--	--	45	32	2,451	19	5	2,552
1984	--	--	98	51	2,626	24	4	2,803
1985	--	--	86	30	2,844	8	4	2,972
1986	--	--	70	40	3,316	10	(6)	(3,442)
Total grains								
1976-80	7,849	10,043	9,037	12,633	19,495	19,383	15,588	94,045
1981-85	8,169	10,893	10,393	14,423	22,224	(21,453)	16,749	104,304
1983	7,905	11,044	10,068	13,765	22,099	(19,598)	17,281	101,760
1984	9,232	11,977	11,361	15,731	24,392	(23,578)	18,013	114,284
1985	5,362	11,769	11,653	14,809	23,742	(21,810)	15,808	104,953
1986	(7,190)	10,780	11,650	14,200	24,984	(25,560)	(18,386)	(112,750)

-- = Data not available, or amount under 1,000 tons. () = Estimate.

1/ 1986 data are preliminary. 2/ Includes grain production from private plots and gardens which averaged 83,000 tons in 1976-80 and 219,000 tons in 1981-85. 3/ For a discussion of the accuracy of Romania's grain production data, see the Grain and Feed Section. 4/ Includes buckwheat, millet, spelt, mixed grains, triticale, and sorghum.

Sources: See Explanatory Notes.

Table 2. Area of grains, Eastern Europe, 1976-80 and 1981-85 averages and 1983-86 annual 1/

Commodity and year	Bulgaria	Czecho-slovakia	GDR	Hungary 2/	Poland	Romania	Yugoslavia	Total Eastern Europe
1,000 hectares								
Wheat								
1976-80	938	1,229	720	1,274	1,735	2,256	1,616	9,768
1981-85	1,083	1,157	702	1,307	1,600	2,236	1,472	9,557
1983	1,128	1,192	754	1,355	1,537	2,222	1,609	9,797
1984	1,126	1,209	747	1,361	1,706	2,350	1,458	9,957
1985	1,067	1,221	744	1,358	1,885	2,356	1,348	9,979
1986	(1,000)	1,210	745	1,317	2,025	2,530	(1,346)	(10,223)
Rye								
1976-80	15	186	645	81	2,997	(40)	64	(4,028)
1981-85	27	186	686	76	3,270	(40)	50	(4,335)
1983	25	203	713	72	3,448	(40)	51	(4,552)
1984	26	197	718	75	3,545	(40)	47	(4,648)
1985	32	182	690	85	3,083	(40)	44	(4,156)
1986	(30)	180	685	89	2,830	(40)	(42)	(3,896)
Barley								
1976-80	485	919	981	237	1,288	662	298	4,870
1981-85	326	875	917	275	1,185	791	282	4,650
1983	323	822	890	277	1,099	741	280	4,432
1984	315	790	866	269	1,055	672	271	4,238
1985	260	799	882	279	1,242	680	264	4,406
1986	(300)	780	898	254	1,335	650	(267)	(4,484)
Oats								
1976-80	49	162	157	36	1,067	52	215	1,738
1981-85	35	150	178	48	1,043	72	169	1,695
1983	34	154	163	48	1,042	70	168	1,679
1984	23	140	161	44	934	67	155	1,524
1985	29	126	178	44	995	72	151	1,595
1986	(30)	120	160	40	924	70	(152)	(1,496)
Corn								
1976-80	657	202	--	1,297	41	3,295	2,256	7,748
1981-85	551	205	1	1,122	16	3,041	2,308	7,244
1983	596	204	--	1,102	15	2,935	2,264	7,116
1984	542	235	--	1,107	15	3,091	2,331	7,321
1985	435	224	2	1,053	16	3,090	2,400	7,220
1986	(550)	230	7	1,118	30	3,200	(2,370)	(7,505)
Rice								
1976-80	17	--	--	23	--	21	8	69
1981-85	15	--	--	13	--	28	9	65
1983	16	--	--	13	--	28	9	66
1984	16	--	--	13	--	33	9	71
1985	13	--	--	11	--	38	9	71
1986	(15)	--	--	10	--	40	(9)	(74)
Other grains 3/								
1976-80	--	--	20	(10)	740	28	6	(804)
1981-85	--	--	31	(16)	980	15	3	(1,046)
1983	--	--	18	(14)	964	16	3	(1,015)
1984	--	--	26	(18)	904	20	3	(971)
1985	--	--	25	(12)	984	9	3	(1,033)
1986	--	--	25	(25)	1,171	15	(4)	(1,240)
Total grains								
1976-80	2,161	2,698	2,524	(2,958)	7,868	6,354	4,463	29,026
1981-85	2,038	2,573	2,515	(2,856)	8,094	6,223	4,292	28,592
1983	2,122	2,575	2,538	(2,881)	8,105	6,052	4,384	28,657
1984	2,048	2,571	2,518	(2,887)	8,159	6,273	4,274	28,730
1985	1,836	2,552	2,521	(2,842)	8,205	6,285	4,219	28,460
1986	(1,925)	2,520	2,520	(2,853)	8,315	6,595	(4,190)	(28,918)

-- = Data not available, or amount under 1,000 hectares. () = Estimate.

1/ 1986 data are preliminary. 2/ Area under socialist cultivation only.

3/ Includes buckwheat, millet, spelt, mixed grains, triticale, and sorghum.

Sources: See Explanatory Notes.

Table 3. Grain trade, Eastern Europe,
1976-80 and 1981-85 averages and 1984-85 annual

Commodity and country	Imports				Exports			
	1976-80	1981-85	1984	1985	1976-80	1981-85	1984	1985
1,000 tons								
Wheat								
Bulgaria	124	165	54	652	326	570	314	677
Czechoslovakia	519	202	206	105	—	(146)	—	(170)
GDR	953	1,189	1,657	1,219	59	(85)	(87)	(95)
Hungary	8	26	—	28	682	1,363	1,260	2,001
Poland	2,723	2,634	2,047	1,703	—	—	—	—
Romania	(687)	(455)	(100)	(300)	(971)	(189)	(80)	(117)
Yugoslavia	630	319	2	58	18	95	258	—
Total	(5,644)	(4,990)	(4,066)	(4,065)	(2,056)	(2,448)	(1,999)	(3,060)
Barley								
Bulgaria	73	154	1	765	18	—	—	—
Czechoslovakia	126	(14)	(50)	—	59	(38)	(100)	—
GDR	782	890	1,444	796	147	(140)	(125)	(128)
Hungary	130	10	1	—	8	18	2	17
Poland	1,410	368	79	383	16	—	—	—
Romania	(84)	(160)	(350)	(150)	—	—	—	—
Yugoslavia	22	11	—	16	4	7	8	4
Total	(2,627)	(1,607)	(1,925)	(2,110)	252	(202)	(235)	(149)
Corn								
Bulgaria	367	379	44	328	84	19	—	—
Czechoslovakia	942	566	368	221	6	3	—	—
GDR	1,775	1,007	606	493	—	—	—	—
Hungary	116	23	8	85	330	250	198	228
Poland	1,985	800	437	138	—	—	—	—
Romania	(590)	(429)	(20)	(105)	(602)	(699)	(262)	(721)
Yugoslavia	240	77	—	—	249	668	685	900
Total	(6,015)	(3,280)	(1,483)	(1,370)	(1,271)	(1,639)	(1,145)	(1,849)
Other grains 1/								
Bulgaria	5	6	2	22	—	—	—	—
Czechoslovakia	14	(26)	—	(64)	4	(20)	—	(37)
GDR	342	(198)	(446)	(53)	170	125	(100)	(135)
Hungary	14	5	—	1	15	15	19	18
Poland	675	88	4	—	18	182	397	416
Romania	302	18	—	—	4	—	—	—
Yugoslavia	4	12	2	39	6	3	11	2
Total	(1,356)	(354)	(454)	(179)	217	(345)	(527)	(608)
Rice								
Bulgaria	7	10	5	22	1	7	8	11
Czechoslovakia	78	68	73	74	—	—	—	—
GDR	44	34	43	29	—	—	—	—
Hungary	23	35	64	18	—	—	—	—
Poland	87	84	104	65	—	—	—	—
Romania	(56)	(55)	44	(50)	—	4	4	3
Yugoslavia	17	23	—	21	—	—	—	—
Total	(312)	(310)	(333)	(279)	2	11	12	14
Total grains								
Bulgaria	576	715	106	1,789	429	595	322	688
Czechoslovakia	1,679	(877)	(697)	(464)	69	(207)	(100)	(207)
GDR	3,896	(3,319)	(4,196)	(2,590)	376	(349)	(312)	(358)
Hungary	291	98	73	132	1,035	1,645	1,479	2,264
Poland	6,880	3,974	2,671	2,289	35	182	397	416
Romania	(1,719)	(1,117)	(514)	(605)	(1,577)	(892)	(346)	(841)
Yugoslavia	913	443	4	134	277	774	962	906
Total	(15,954)	(10,541)	(8,261)	(8,003)	(3,798)	(4,645)	(3,918)	(5,680)

-- = No information reported, or amount less than 1,000 tons.

1/ Rye, oats, bran, and grain sorghum.

Sources: see Explanatory Notes. Export data for the GDR are trading partners data.

Table 4. Production of selected crops, Eastern Europe, 1976-80 and 1981-85 averages and 1983-86 annual 1/

Commodity and year	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Yugoslavia	Total Eastern Europe
1,000 tons								
Potatoes								
1976-80	370	3,678	9,873	1,567	42,742	4,431	2,705	65,366
1981-85	431	3,591	10,116	1,446	36,594	5,880	2,572	60,630
1983	427	3,177	7,063	1,234	34,473	6,260	2,580	55,214
1984	418	3,978	11,908	1,551	37,437	6,391	2,457	64,140
1985	439	3,450	12,350	1,378	36,546	7,294	2,413	63,870
1986	(425)	3,455	(10,300)	1,300	39,000	8,515	2,652	(65,647)
Sugarbeets								
1976-80	1,827	7,132	6,996	3,979	14,149	6,135	5,258	45,476
1981-85	1,084	7,296	7,233	4,461	15,606	6,074	6,124	47,878
1983	746	6,041	5,711	3,783	16,364	4,819	5,666	43,130
1984	1,133	7,513	7,820	4,360	16,048	7,019	6,792	50,685
1985	824	7,746	7,397	4,073	14,664	6,446	6,268	47,418
1986	(1,000)	7,138	7,052	3,764	14,200	7,000	5,599	(45,753)
Sunflowerseed								
1976-80	392	17	—	300	—	821	433	1,963
1981-85	450	39	—	615	—	784	211	2,099
1983	454	41	—	592	—	700	139	1,926
1984	462	43	—	600	—	851	154	2,110
1985	365	42	—	676	—	710	233	2,026
1986	(475)	57	—	855	—	(1,000)	450	(2,837)
Rapeseed								
1976-80	—	151	291	81	637	12	60	1,232
1981-85	—	255	307	86	693	28	99	1,469
1983	—	314	259	93	554	21	103	1,344
1984	—	300	303	92	911	57	124	1,787
1985	—	285	380	85	1,073	35	126	1,984
1986	—	(305)	(406)	(117)	1,300	55	(115)	(2,298)
Soybeans								
1976-80	114	4	—	37	—	293	56	504
1981-85	82	5	—	49	—	310	180	627
1983	82	5	—	51	—	259	210	607
1984	72	4	—	49	—	407	228	760
1985	37	4	—	46	—	317	174	578
1986	(65)	3	—	53	—	400	225	(746)
Tobacco								
1976-80	141	5	5	21	80	46	67	365
1981-85	127	6	5	20	100	30	74	363
1983	112	6	5	20	100	25	67	335
1984	141	5	5	19	98	37	77	382
1985	126	6	6	18	111	27	80	374
1986	(125)	5	5	20	112	30	96	(393)
Corn silage								
1976-80	4,866	14,930	10,951	6,104	21,512	4,348	1,253	63,964
1981-85	5,746	16,781	11,710	6,845	14,244	5,035	2,030	62,392
1983	6,630	14,898	10,614	6,271	11,876	6,694	2,085	59,068
1984	5,536	16,992	11,211	6,990	12,463	4,838	2,435	60,465
1985	5,544	17,562	12,885	6,592	11,646	1,294	2,204	57,727
Hay 2/								
1976-80	2,052	6,129	4,809	2,903	8,294	5,636	3,414	33,237
1981-85	2,000	7,219	6,032	2,468	9,172	6,423	3,046	36,360
1983	1,939	7,275	5,913	2,390	8,893	6,353	2,952	35,715
1984	2,131	7,536	6,444	2,504	9,568	6,964	3,029	38,176
1985	1,674	8,196	6,428	2,182	9,665	7,169	2,816	38,130
Feed roots								
1976-80	690	870	2,401	692	9,055	3,605	749	18,062
1981-85	371	1,271	3,242	675	10,799	3,966	618	20,942
1983	346	1,060	2,355	625	10,351	3,675	614	19,026
1984	307	1,665	4,109	736	10,891	4,770	617	23,095
1985	275	1,616	4,204	668	10,488	3,715	522	21,488

— = No information reported, or amount less than 1,000 tons.

1/ 1986 data are preliminary and unavailable for corn silage, hay, and feed roots. 2/ Does not include meadow hay and includes only lucerne, clover, and vetch in Yugoslavia.

Sources: See Explanatory Notes.

Table 5. Area of selected crops, Eastern Europe, 1976-80 and 1981-85 averages and 1983-86 annual 1/

Commodity and year	Bulgaria	Czechoslovakia	GDR	Hungary 2/	Poland	Romania	Yugoslavia	Total Eastern Europe
1,000 hectares								
Potatoes								
1976-80	35	223	566	110	2,410	291	301	3,936
1981-85	39	195	491	79	2,179	312	279	3,575
1983	41	193	483	77	2,220	319	274	3,607
1984	40	194	488	77	2,147	312	274	3,532
1985	40	188	475	70	2,095	321	274	3,463
1986	(40)	182	480	75	2,000	350	283	(3,410)
Sugarbeets								
1976-80	66	217	260	118	505	247	125	1,538
1981-85	51	212	246	115	472	273	144	1,512
1983	33	211	238	109	486	257	141	1,475
1984	53	209	240	109	473	280	145	1,509
1985	50	206	233	107	436	276	150	1,458
1986	(50)	196	240	105	423	280	138	(1,432)
Sunflowerseed								
1976-80	233	13	—	185	—	515	214	1,160
1981-85	259	23	—	309	488	121	1,199	—
1983	262	23	—	287	—	490	76	1,138
1984	253	27	—	317	—	480	81	1,158
1985	267	23	—	343	—	466	112	1,211
1986	(275)	25	—	390	—	455	188	(1,333)
Rapeseed								
1976-80	—	72	124	53	327	8	28	612
1981-85	—	108	128	56	329	32	48	701
1983	—	118	122	52	247	24	46	609
1984	—	113	132	57	396	50	56	804
1985	—	117	144	56	467	59	63	906
1986	—	121	145	55	515	58	(72)	(966)
Soybeans								
1976-80	83	3	—	25	—	239	29	379
1981-85	74	3	—	26	—	307	89	500
1983	64	3	—	30	—	275	107	479
1984	72	3	—	30	—	364	114	583
1985	71	3	—	24	—	319	101	518
1986	(65)	2	—	24	—	300	96	(487)
Tobacco								
1976-80	116	4	3	16	51	48	62	300
1981-85	105	4	5	14	51	36	61	274
1983	108	4	3	13	53	35	60	276
1984	104	4	4	12	50	35	61	270
1985	102	4	4	13	52	35	68	278
1986	(100)	4	4	13	54	35	73	(283)
Corn silage								
1976-80	273	439	372	319	624	172	42	2,241
1981-85	356	445	369	322	431	150	72	2,146
1983	279	436	373	354	422	198	71	2,133
1984	349	467	373	333	365	140	82	2,109
1985	519	440	361	276	308	75	88	2,067
Hay 3/								
1976-80	453	957	540	656	1,698	942	659	5,905
1981-85	485	1,006	602	583	1,820	886	627	6,009
1983	488	1,018	598	578	1,833	947	615	6,077
1984	490	984	592	579	1,757	899	624	5,925
1985	500	1,013	600	572	1,761	888	627	5,961
Feed roots								
1976-80	14	21	55	20	258	85	35	488
1981-85	10	28	74	18	262	96	33	521
1983	10	29	61	18	258	97	33	506
1984	9	35	88	17	252	101	32	534
1985	10	37	91	17	238	83	32	508

— = No information reported, or amount less than 1,000 hectares.

() = Estimate.

1/ 1986 data are preliminary and unavailable for corn silage, hay, and feed roots. 2/ Area under socialist cultivation only. 3/ Does not include meadow hay and includes only lucerne, clover, and vetch in Yugoslavia.

Sources: See Explanatory Notes.

Table 6. Trade of selected agricultural commodities, Eastern Europe, 1976-80 and 1981-85 averages and 1984-85 annual

Commodity and country	Imports				Exports			
	1976-80	1981-85	1984	1985	1976-80	1981-85	1984	1985
1,000 tons								
Oilseeds 1/								
Bulgaria	9	20	24	50	22	13	11	14
Czechoslovakia	135	(69)	(72)	50	2	1	--	--
GDR	55	79	165	75	21	(16)	(12)	(4)
Hungary	8	4	—	3	86	124	130	132
Poland	143	95	45	29	51	60	59	239
Romania	(251)	(254)	(422)	(182)	4	(2)	(3)	(2)
Yugoslavia	163	295	382	297	16	2	2	2
Total	(764)	(814)	(1,110)	(686)	202	(218)	(217)	(393)
Oilseed meal								
Bulgaria	194	314	418	486	—	—	—	—
Czechoslovakia	643	755	801	785	20	1	—	2
GDR	949	1,115	975	984	6	5	7	--
Hungary	614	679	742	654	(1)	8	(2)	--
Poland	1,160	912	910	998	(5)	30	34	112
Romania	297	(225)	(93)	(126)	—	—	—	—
Yugoslavia	172	171	141	133	3	5	—	21
Total	4,029	(4,170)	(4,080)	(4,166)	(35)	49	(43)	135
Vegetable oil, edible								
Bulgaria	1	(11)	(24)	(13)	16	32	70	7
Czechoslovakia	44	46	44	43	1	—	—	--
GDR	113	106	86	110	—	—	—	—
Hungary	14	10	7	6	58	169	179	168
Poland	78	77	50	65	57	18	36	38
Romania	9	6	5	4	122	86	110	34
Yugoslavia	52	121	114	134	14	5	10	1
Total	311	(370)	(330)	(375)	268	308	405	248
Meat and meat products 2/								
Bulgaria	9	4	5	6	108	114	128	126
Czechoslovakia	26	24	16	29	32	47	46	--
GDR	24	57	69	17	133	(134)	(144)	(137)
Hungary	13	14	9	4	285	423	490	414
Poland	48	104	125	58	156	81	84	95
Romania	39	26	6	13	187	173	145	266
Yugoslavia	41	40	35	26	94	147	162	168
Total	200	269	265	153	995	(1,119)	(1,199)	(1,206)
Sugar 3/								
Bulgaria	219	348	375	445	2	2	--	12
Czechoslovakia	88	147	187	203	210	204	234	307
GDR	209	261	313	265	(82)	(131)	(111)	(222)
Hungary	84	28	—	—	31	43	3	44
Poland	58	66	—	—	208	182	314	188
Romania	139	166	277	63	(72)	(68)	(3)	(136)
Yugoslavia	85	133	296	13	78	34	17	126
Total	882	1,148	1,448	989	(683)	(666)	(682)	(1,035)
Tobacco								
Bulgaria	7	26	42	30	69	63	62	60
Czechoslovakia	21	21	17	21	1	—	—	--
GDR	20	20	22	20	2	1	—	1
Hungary	7	6	5	5	1	3	4	1
Poland	12	14	13	10	9	5	6	7
Romania	1	(2)	(1)	(3)	7	(4)	(3)	(3)
Yugoslavia	4	9	9	14	24	22	18	15
Total	72	(98)	(109)	(103)	113	(98)	(93)	(87)
Cotton								
Bulgaria	57	72	67	87	—	—	—	--
Czechoslovakia	109	121	126	126	—	—	—	--
GDR	90	112	149	117	—	—	—	--
Hungary	93	85	87	81	—	—	—	--
Poland	163	153	159	166	—	—	—	--
Romania	111	101	87	102	—	—	—	--
Yugoslavia	108	117	127	145	—	—	—	--
Total	731	761	802	824	—	—	—	--
Hides and skins								
Bulgaria	6	9	11	12	—	—	—	--
Czechoslovakia 4/	(50)	(105)	(128)	(163)	—	—	—	--
GDR	17	12	11	10	—	—	—	--
Hungary	31	29	29	25	—	—	—	--
Poland	42	41	37	48	—	—	—	--
Romania	44	36	35	30	—	—	—	--
Yugoslavia	27	31	30	43	—	—	—	--
Total	(217)	(263)	(281)	(331)	—	—	—	--

-- = No information reported, or amount less than 1,000 tons. () = Estimate.

1/ Rapeseed, soybeans, and sunflowerseed. 2/ Includes poultry meat. 3/ Total in raw equivalent. 4/ Converted from pieces to metric tons at 22 kilograms per piece.

Sources: See Explanatory Notes; statistical yearbooks of trading partners.

Table 7. January livestock numbers, Eastern Europe, 1976-80 and 1981-85 averages and 1984-87 annual 1/

Category and year	Bulgaria	Czecho-slovakia	GDR	Hungary	Poland	Romania	Yugoslavia	Total Eastern Europe
1,000 head								
Cattle								
1976-80	1,733	4,754	5,544	1,926	12,339	6,361	5,575	38,232
1981-85	1,783	5,115	5,756	1,920	11,163	6,565	5,366	37,668
1984	1,778	5,190	5,768	1,907	11,085	6,752	5,341	37,821
1985	1,751	5,150	5,848	1,910	10,906	7,039	5,199	37,803
1986	1,706	5,065	5,827	1,766	10,774	7,077	5,034	37,249
1987	(1,680)	5,073	5,814	1,725	10,518	(6,800)	5,030	(36,640)
Cows								
1976-80	697	1,902	2,145	773	5,914	2,612	3,181	17,224
1981-85	699	1,896	2,112	747	5,670	2,600	3,043	16,767
1984	695	1,896	2,096	735	5,687	2,583	3,005	16,697
1985	687	1,880	2,080	725	5,605	2,593	2,997	16,567
1986	670	1,860	2,064	688	5,331	2,556	2,915	16,084
1987	(660)	1,842	2,047	670	5,015	(2,500)	2,893	(15,627)
Hogs								
1976-80	3,669	7,240	11,683	7,805	20,219	9,997	7,513	68,126
1981-85	3,793	7,227	12,819	8,953	17,689	13,155	8,536	72,171
1984	3,769	7,070	13,058	9,844	15,858	14,347	9,337	73,283
1985	3,734	6,743	13,191	9,255	17,207	14,777	8,673	73,580
1986	3,912	6,651	12,946	8,280	19,170	14,319	7,821	73,099
1987	(3,985)	6,829	12,744	8,687	19,615	(12,630)	8,459	(72,949)
Sheep								
1976-80	10,105	837	1,925	2,560	3,452	14,818	7,504	41,201
1981-85	10,680	994	2,258	3,068	3,816	17,432	7,474	45,722
1984	10,978	1,041	2,359	2,977	3,989	18,451	7,458	47,253
1985	10,501	1,068	2,528	2,950	4,413	18,637	7,678	47,775
1986	9,724	1,087	2,587	2,465	4,720	15,865	7,693	44,141
1987	(9,470)	1,090	2,647	2,337	3,800	(17,020)	7,819	(44,183)
Horses								
1976-80	126	54	67	141	1,970	565	751	3,674
1981-85	119	45	83	111	1,641	(605)	499	(3,103)
1984	119	45	88	111	1,570	(620)	463	(3,016)
1985	119	46	101	102	1,504	(640)	438	(2,950)
1986	120	46	105	98	1,324	672	409	2,774
1987	(120)	46	90	95	1,500	(670)	384	(2,905)
Poultry								
1976-80	39,989	44,871	49,102	63,002	86,259	90,858	59,752	433,833
1981-85	42,081	48,676	52,339	65,329	70,286	112,258	69,448	460,417
1984	43,078	50,977	53,018	63,276	62,439	119,237	74,008	466,033
1985	42,277	48,519	51,317	63,280	69,300	123,962	70,453	469,108
1986	39,227	47,278	50,680	61,570	72,300	124,770	78,281	474,106
1987	(40,208)	48,717	NA	NA	NA	NA	(79,696)	NA

() = Estimate. NA = Not available.

1/ 1987 data are preliminary.

Sources: See Explanatory Notes.

Table 8. Production of principal livestock products, Eastern Europe, 1976-80 and 1981-85 averages and 1983-86 annual 1/

Category and year	Bulgaria	Czecho-slovakia	GDR	Hungary	Poland	Romania	Yugoslavia	Total Eastern Europe
1,000 tons								
Beef & veal 2/								
1976-80	143	424	447	203	869	306	362	2,754
1981-85	162	442	442	204	735	(242)	372	(2,599)
1983	165	435	421	198	772	(210)	373	(2,574)
1984	166	462	436	203	725	(235)	388	(2,615)
1985	167	468	460	218	753	(245)	367	(2,678)
1986	(160)	475	(470)	(195)	(775)	(245)	(355)	(2,675)
Mutton, lamb, & goat meat 2/								
1976-80	99	6	20	15	29	76	60	305
1981-85	117	10	19	21	29	(74)	60	(330)
1983	114	10	16	20	27	(75)	62	(324)
1984	123	11	21	23	28	(75)	59	(340)
1985	126	12	22	22	35	(80)	63	(360)
1986	(125)	13	(25)	20	30	(80)	(60)	(353)
Pork 2/ 3/								
1976-80	349	803	1,198	922	1,728	876	720	6,596
1981-85	387	837	1,317	1,100	1,406	(959)	798	(6,803)
1983	394	827	1,264	1,142	1,444	(894)	772	(6,737)
1984	391	846	1,346	1,211	1,228	(983)	876	(6,881)
1985	390	853	1,405	1,114	1,463	(1,020)	772	(7,017)
1986	(395)	865	(1,425)	1,060	(1,720)	(900)	(695)	(7,060)
Poultry meat 2/								
1976-80	149	159	137	328	374	363	250	1,760
1981-85	157	170	154	319	277	(462)	293	(1,831)
1983	161	167	153	404	199	(465)	287	(1,836)
1984	166	169	157	405	255	(465)	311	(1,928)
1985	158	172	162	402	277	(520)	297	(1,988)
1986	(165)	180	(170)	440	310	(475)	(315)	(2,055)
Total meat 2/, 4/								
1976-80	745	1,423	1,821	1,472	3,064	1,623	1,398	11,546
1981-85	826	1,501	1,954	1,729	2,584	(1,741)	1,594	(11,929)
1983	837	1,483	1,873	1,769	2,509	(1,649)	1,565	(11,685)
1984	848	1,536	1,988	1,846	2,526	(1,780)	1,708	(12,232)
1985	843	1,547	2,077	1,760	2,781	(1,850)	1,572	(12,430)
1986	(845)	1,575	(2,120)	(1,710)	3,090	(1,715)	(1,450)	(12,505)
Milk 5/								
1976-80	1,653	5,629	8,155	2,283	16,805	4,164	4,136	42,825
1981-85	2,076	6,398	8,371	2,751	15,983	3,841	4,591	44,011
1983	2,196	6,495	8,203	2,809	16,093	3,853	4,609	44,258
1984	2,164	6,763	8,729	2,800	16,742	4,060	4,577	45,835
1985	2,120	6,883	9,044	2,726	16,446	4,324	4,684	46,227
1986	(2,185)	(7,000)	(9,360)	2,750	15,790	4,200	(4,610)	(45,895)
Million pieces								
Eggs								
1976-80	2,163	4,691	5,287	4,475	8,523	6,583	4,117	35,839
1981-85	2,593	5,247	5,718	4,351	8,186	7,577	4,588	38,259
1983	2,615	5,232	5,850	4,444	7,642	7,465	4,567	37,815
1984	2,680	5,504	5,779	4,327	8,202	8,013	4,640	39,145
1985	2,781	5,499	5,596	4,228	8,636	8,235	4,692	39,667
1986	(2,935)	5,535	(5,680)	(4,049)	8,120	8,000	(4,780)	(39,099)

() = Estimate.

1/ 1986 data are preliminary. 2/ Data include offal and edible slaughter fat, and live animal exports for slaughter. 3/ Yugoslav series revised to omit double counting of some offals. 4/ Data include horse and rabbit meat. 5/ Data include only cow milk for consumption in Romania, Yugoslavia, and Hungary. Data in the remaining countries include milk sucked by calves. In the GDR, milk production is given in 3.5 percent fat equivalent.

Sources: See Explanatory Notes; various reports of U.S. Agricultural Counselors in Belgrade, Berlin, Budapest, and Warsaw.

Table 9. Per capita consumption of selected foods,
Eastern Europe, 1975, 1980, and 1982-86 1/

Commodity and year	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania 2/	Yugoslavia
Kilograms							
Total meat 3/							
1975	60.6	81.1	77.8	89.9	78.4	45.7	48.3
1980	64.9	85.6	89.5	93.6	82.1	60.0	54.2
1982	72.5	79.5	91.0	96.7	65.3	4/ 65.0	52.4
1983	73.8	83.7	92.1	98.3	65.4	4/ 58.0	53.8
1984	74.5	84.8	94.4	101.2	63.6	4/ 57.0	52.6
1985	75.5	86.0	96.2	106.0	67.3	4/ 56.0	(52.0)
1986	(75.0)	87.0	96.0	104.0	(69.0)	4/ (56.0)	(50.0)
Eggs 5/							
1975	146	297	269	274	209	214	166
1980	204	316	289	317	223	270	190
1982	217	324	301	307	200	270	187
1983	231	328	302	327	200	270	193
1984	236	337	303	320	210	270	175
1985	239	338	305	320	220	280	(175)
Vegetable oil							
1975	14.1	6.7	2.0	2.9	6.5	--	10.6
1980	14.8	7.2	1.6	4.2	7.0	--	11.3
1982	14.9	7.6	1.8	4.8	5.9	--	12.3
1983	14.8	7.1	1.7	5.0	6.6	--	12.3
1984	15.0	7.3	1.8	4.9	7.6	--	11.8
1985	15.3	7.3	1.8	5.0	8.4	--	(11.5)
Sugar							
1975	32.5	38.0	36.8	39.4	43.2	20.3	32.8
1980	34.7	37.5	40.6	37.9	41.4	28.2	36.6
1982	35.1	39.6	41.9	38.0	41.7	--	34.1
1983	35.4	37.8	39.2	35.6	45.0	--	34.5
1984	35.7	37.5	39.1	34.2	45.0	--	31.8
1985	35.1	38.0	39.6	34.0	41.3	--	(31.0)
Grain, in flour equivalent							
1975	162	108	95	122	120	189	183
1980	160	107	95	115	127	172	178
1982	155	110	97	113	119	173	173
1983	150	108	97	111	118	173	178
1984	146	109	100	111	116	173	174
1985	146	109	99	110	116	174	(175)
Vegetables							
1975	127	74	90	85	109	113	87
1980	125	66	94	80	101	140	97
1982	142	75	96	76	107	170	96
1983	127	71	91	78	103	170	83
1984	138	81	92	77	116	170	91
1985	130	77	104	--	105	170	(90)
Potatoes							
1975	23	96	142	67	173	96	66
1980	27	76	143	61	158	71	61
1982	30	79	145	57	155	100	61
1983	31	79	144	58	154	100	61
1984	30	81	146	59	149	105	55
1985	32	79	143	58	143	105	(55)

-- = Data not available. () = Estimate.

1/ 1986 data are preliminary and available for meat only. 2/ *Revista Economica*, Dec. 29, 1978; *Lumea*, Oct. 30, 1981; *Bucharest Domestic Service*, Nov. 1, 1981; *Scinteia*, Nov. 29, 1981; unpublished official statistics. 3/ Hungarian series revised to include edible offals and fats. *Vestnik statistiki* #4, 1985. 4/ Includes fish. 5/ Units.

Sources: See Explanatory Notes and footnotes 2 and 3 above.

Table 10. Total and agricultural trade, Eastern Europe, 1980-86 1/

Category and year	Bulgaria	Czechoslovakia	GDR	Hungary	Poland	Romania	Yugoslavia	Total Eastern Europe
\$ million								
Exports								
1980	10,372	14,891	17,312	8,877	16,997	11,024	9,077	88,550
1981	10,685	14,782	19,856	8,894	13,249	12,367	10,363	90,196
1982	11,428	15,694	21,743	9,057	11,214	11,559	10,460	91,155
1983	12,129	16,477	23,793	8,881	11,572	11,512	9,913	94,277
1984	12,850	17,153	24,838	8,836	11,750	12,646	9,993	98,066
1985	(12,258)	17,554	24,050	8,935	9,286	12,167	10,642	(94,892)
1986	(11,900)	(17,835)	(24,000)	(8,755)	(9,715)	(10,755)	10,850	(93,810)
Imports								
1980	9,650	15,148	19,082	9,020	19,089	12,685	13,967	98,641
1981	10,779	14,634	20,181	8,855	15,476	12,264	15,528	97,717
1982	11,526	15,592	20,196	8,579	10,244	9,745	12,484	88,366
1983	12,283	16,324	21,525	8,453	10,590	9,643	11,144	89,962
1984	12,714	17,078	21,926	8,024	10,638	10,334	11,644	92,358
1985	(13,476)	17,642	22,250	8,324	8,792	10,432	12,164	(93,080)
1986	(13,505)	(18,400)	(22,500)	(8,490)	(9,110)	(9,850)	(12,915)	(94,770)
Balance								
1980	722	-257	-1,770	-143	-2,092	-1,661	-4,890	-10,091
1981	-94	148	-325	39	-2,227	103	-5,165	-7,521
1982	-98	102	1,547	478	970	1,814	-2,024	2,789
1983	-154	153	2,268	428	982	1,869	-1,231	4,315
1984	136	75	2,912	812	1,112	2,312	-1,651	5,708
1985	(-1,218)	-88	1,800	611	494	1,735	-1,522	(1,812)
1986	(-1,605)	(-565)	(1,500)	(265)	(605)	(905)	(-2,065)	(-960)
Agricultural exports								
1980	1,526	688	593	1,991	1,109	1,410	1,090	8,407
1981	1,331	636	616	2,252	653	1,320	1,201	8,009
1982	1,446	587	497	2,243	659	1,011	1,269	7,712
1983	1,386	553	413	2,039	780	845	1,189	7,205
1984	1,163	530	396	1,961	901	800	1,076	6,827
1985	1,125	568	409	1,847	901	863	1,038	6,751
Agricultural imports								
1980	674	2,026	2,470	1,071	3,098	1,430	1,640	12,409
1981	800	1,881	2,186	1,041	3,074	1,573	1,478	12,033
1982	631	1,759	1,951	732	1,852	839	1,310	9,074
1983	833	1,660	2,421	796	1,328	749	1,086	8,873
1984	805	1,593	2,277	751	1,485	705	1,150	8,766
1985	1,010	1,722	1,691	721	1,281	515	1,057	7,997
Agricultural trade balance								
1980	852	-1,338	-1,877	920	-1,989	-20	-550	-4,002
1981	531	-1,245	-1,570	1,211	-2,421	-253	-277	-4,024
1982	815	-1,172	-1,454	1,511	-1,193	172	-41	-1,362
1983	553	-1,107	-2,008	1,243	-548	96	103	-1,668
1984	358	-1,063	-1,881	1,210	-584	95	-74	-1,939
1985	115	-1,154	-1,282	1,126	-380	348	-19	-1,246

() = Estimate.

1/ 1986 data are preliminary and unavailable for agricultural trade.

Sources: See Explanatory Notes; United Nations and IMF data for total imports and exports.

Table II. U.S. total and agricultural trade with Eastern Europe, 1976-80 and 1981-85 averages and 1984-86 annual

Commodity and year	Bulgaria	Czecho-slovakia	GDR	Hungary	Poland	Romania	Yugo-slavia	Total Eastern Europe
\$ million								
Total exports								
1976-80	68.7	206.2	336.0	85.0	666.3	418.3	548.4	2,359.0
1981-85	116.8	80.4	188.2	86.5	370.3	282.3	567.7	1,692.2
1984	44.1	58.1	135.8	85.2	314.8	246.2	429.9	1,314.1
1985	103.5	62.6	76.9	92.1	238.3	207.3	593.2	1,373.9
1986	95.9	67.5	70.6	88.2	145.9	249.2	520.8	1,238.1
Total imports								
1976-80	21.6	49.2	29.0	76.5	385.0	284.3	389.7	1,235.4
1981-85	29.6	70.1	78.6	170.5	239.2	637.9	439.6	1,665.4
1984	30.3	84.2	149.1	220.1	215.7	896.7	477.8	2,073.9
1985	34.0	74.9	90.3	216.6	217.0	881.3	552.5	2,066.6
1986	54.0	85.1	85.4	224.6	231.5	749.5	654.2	2,084.3
Balance								
1976-80	47.2	157.0	337.0	8.5	281.2	134.0	158.7	1,123.6
1981-85	87.2	10.3	109.7	-84.0	131.1	-355.6	128.1	26.8
1984	13.8	-26.1	-13.3	-134.9	99.1	-650.5	-47.9	-759.8
1985	69.5	-12.3	-13.4	-124.5	21.3	-674.0	40.7	-692.7
1986	41.9	-17.6	-14.8	-136.4	-85.6	-500.3	-133.4	-846.2
Direct agricultural exports 1/								
1976-80	48.4	133.6	206.8	31.6	500.0	247.5	156.1	1,324.0
1981-85	73.3	37.9	162.6	31.2	252.9	171.7	182.4	912.0
1984	17.0	28.4	129.2	42.6	194.2	157.1	188.9	757.4
1985	50.9	19.4	64.9	35.3	92.2	81.4	135.0	479.1
1986	51.3	20.9	60.9	27.0	33.1	115.5	124.0	432.7
Total agricultural exports 2/								
1976-80	50.8	181.2	352.1	37.0	519.1	256.0	171.1	1,567.2
1981-85	74.5	49.5	176.9	31.2	254.0	180.7	191.8	958.6
1984	17.0	28.4	129.2	42.6	194.2	157.1	188.9	757.4
1985	50.9	19.4	64.9	35.3	92.2	81.4	135.0	479.1
1986	51.3	20.9	60.9	27.0	33.1	115.5	124.0	432.7
Total agricultural imports								
1976-80	19.9	6.7	2.1	29.0	148.8	26.5	85.2	318.1
1981-85	23.5	10.2	1.8	42.4	96.9	19.0	64.6	258.5
1984	23.0	10.1	1.2	46.3	94.2	20.0	65.3	260.1
1985	20.8	7.6	2.5	55.7	106.9	8.9	60.9	263.3
1986	21.8	13.7	0.5	59.7	130.8	12.1	66.0	304.6
Balance								
1976-80	30.9	174.1	350.1	8.0	370.3	229.6	85.8	1,249.1
1981-85	51.0	39.3	175.1	-11.2	157.1	161.7	127.1	700.1
1984	-6.0	18.3	128.0	-3.7	100.0	137.1	123.6	497.3
1985	30.1	11.8	62.4	-20.4	-14.7	72.5	74.1	215.8
1986	29.5	7.2	60.4	-32.7	-97.7	103.4	58.0	128.1

1/ Includes estimated transshipments through Canada. 2/ Data from before 1984 include estimated transshipments through Belgium, Canada, the Federal Republic of Germany, and the Netherlands, in addition to Canada. Beginning in 1984, the non-Canadian transshipments are not included because of their decline in value and the difficulty in obtaining data.

Sources: Bureau of the Census, Department of Commerce; U.S. Export Sales, FAS/USDA.

Table 12. Volume and value of principal U.S. agricultural exports to Eastern Europe, 1/
1976-80 and 1981-85 averages and 1984-86 annual

Commodity and country	Volume					Value				
	1976-80	1981-85	1984	1985	1986	1976-80	1981-85	1984	1985	1986
	1,000 tons					\$ million				
Total grain										
Bulgaria	230	326	44	269	194	27.8	44.9	6.0	28.8	22.3
Czechoslovakia	723	180	--	--	--	97.2	23.3	--	--	--
GDR	2,074	1,086	784	457	338	265.9	142.6	103.0	49.9	30.7
Hungary	44	5	--	--	--	5.2	0.2	--	--	--
Poland	2,769	696	289	167	62	330.5	102.4	44.3	23.1	8.9
Romania	864	394	--	105	322	107.1	57.5	--	10.7	30.9
Yugoslavia	522	218	32	--	366	73.0	28.9	3.6	--	33.2
Total	7,226	2,906	1,149	998	1,282	906.7	399.7	156.9	112.5	126.0
Wheat										
Bulgaria	--	--	--	--	--	--	--	--	--	--
Czechoslovakia	165	--	--	--	--	28.9	--	--	--	--
GDR	294	56	--	--	--	45.7	10.2	--	--	--
Hungary	--	--	--	--	--	--	--	--	--	--
Poland	617	73	116	85	59	83.1	12.0	18.8	12.3	7.9
Romania	244	13	--	--	--	33.9	1.7	--	--	--
Yugoslavia	250	135	--	--	364	41.9	19.1	--	--	32.4
Total	1,570	277	116	85	423	233.5	42.9	18.8	12.3	40.3
Corn										
Bulgaria	240	314	44	210	194	27.8	41.9	6.4	23.3	22.3
Czechoslovakia	549	180	--	--	--	67.0	23.3	--	--	--
GDR	1,650	947	606	457	336	207.0	122.4	80.9	49.9	30.0
Hungary	21	--	--	--	--	2.4	--	--	--	--
Poland	1,840	617	173	78	--	212.1	87.6	25.5	9.9	--
Romania	544	382	--	105	211	66.1	55.7	--	10.7	20.8
Yugoslavia	254	77	--	--	--	29.4	9.1	--	--	--
Total	5,098	2,516	823	850	741	611.8	339.9	112.8	93.8	73.1
Soybeans										
Bulgaria	--	13	23	22	47	--	3.6	6.9	5.0	9.7
Czechoslovakia	6	5	--	13	--	4.4	1.2	--	3.1	--
GDR	5	3	12	--	12	1.2	0.8	3.6	--	3.8
Hungary	--	--	--	--	--	--	--	--	--	--
Poland	134	91	74	--	--	35.6	23.4	20.5	--	--
Romania	222	234	369	98	239	54.9	61.5	112.5	22.4	49.5
Yugoslavia	155	238	302	235	179	42.2	61.1	84.8	50.2	36.6
Total	522	584	780	368	477	138.3	151.7	228.3	80.7	99.6
Vegetable oil										
Bulgaria	--	--	--	--	--	--	--	--	--	--
Czechoslovakia	--	--	--	--	--	--	--	--	--	--
GDR	--	--	--	--	--	1.0	--	--	--	--
Hungary	--	--	--	--	--	--	--	--	--	--
Poland	15	9	8	4	4	8.8	7.2	7.8	4.0	2.5
Romania	--	--	--	--	--	--	--	--	--	--
Yugoslavia	4	31	--	--	--	2.4	13.4	--	--	--
Total	20	40	8	4	4	12.2	20.6	7.8	4.0	2.5
Soybean meal and cake										
Bulgaria	73	71	--	--	18	16.9	16.8	--	--	3.0
Czechoslovakia	281	39	--	--	--	56.7	8.5	--	--	--
GDR	345	101	--	47	116	75.7	--	--	8.4	22.6
Hungary	95	91	141	105	77	22.8	20.0	30.5	18.7	18.6
Poland	356	148	210	81	--	76.1	35.2	45.9	13.9	--
Romania	158	91	--	24	26	36.0	24.1	--	4.7	6.7
Yugoslavia	133	111	59	59	118	27.8	24.8	11.1	12.7	24.2
Total	1,441	653	410	316	355	312.0	154.1	87.5	58.4	75.1

CONTINUED

Table 12. Volume and value of principal U.S. agricultural exports to Eastern Europe, 1/
1976-80 and 1981-85 averages and 1984-86 annual

Commodity and country	Volume					Value				
	1976-80	1981-85	1984	1985	1986	1976-80	1981-85	1984	1985	1986
	1,000 tons					\$ million				
Cotton										
Bulgaria	--	--	--	--	--	--	--	--	--	--
Czechoslovakia	--	--	--	--	--	--	--	--	--	--
GDR	--	1	--	1	--	--	0.2	--	0.8	--
Hungary	--	--	--	--	--	--	0.8	0.3	--	--
Poland	8	1	--	--	--	12.3	3.0	--	--	--
Romania	10	--	--	--	--	15.4	--	--	--	--
Yugoslavia	--	19	19	28	4	--	33.2	36.2	47.2	8.0
Total	18	21	19	29	4	27.7	37.2	36.5	48.0	8.0
Cattle hides 2/										
Bulgaria	41	29	64	79	10	1.1	1.3	2.8	3.1	0.4
Czechoslovakia	589	464	670	418	522	15.2	14.3	25.5	13.9	19.0
GDR	33	--	--	--	--	0.7	0.1	0.2	--	--
Hungary	183	99	152	39	39	3.9	3.3	6.6	1.6	1.3
Poland	441	402	320	403	179	12.6	12.1	12.3	13.5	6.3
Romania	1,486	1,028	1,032	1,169	689	38.8	34.5	41.5	41.0	24.4
Yugoslavia	461	379	676	383	203	9.9	15.7	33.1	16.3	12.2
Total	3,234	2,400	2,914	2,491	1,642	82.2	81.3	122.0	89.4	63.6
Other										
Bulgaria	--	--	--	--	--	4.9	7.9	1.3	14.0	15.9
Czechoslovakia	--	--	--	--	--	10.3	2.2	2.9	2.4	1.9
GDR	--	--	--	--	--	3.5	8.6	22.4	5.8	3.8
Hungary	--	--	--	--	--	4.6	6.9	5.2	15.0	7.1
Poland	--	--	--	--	--	42.6	70.8	63.4	37.7	15.4
Romania	--	--	--	--	--	5.8	3.1	3.1	2.6	4.0
Yugoslavia	--	--	--	--	--	26.6	14.6	20.1	8.6	9.8
Total	--	--	--	--	--	98.3	114.1	118.4	86.1	57.9
Total										
Bulgaria	--	--	--	--	--	50.7	74.5	17.0	50.9	51.3
Czechoslovakia	--	--	--	--	--	183.8	49.5	28.4	19.4	20.9
GDR	--	--	--	--	--	348.0	176.9	129.2	64.9	60.9
Hungary	--	--	--	--	--	36.5	31.2	42.6	35.3	27.0
Poland	--	--	--	--	--	518.5	254.0	194.2	92.2	33.1
Romania	--	--	--	--	--	258.0	180.7	157.1	81.4	115.5
Yugoslavia	--	--	--	--	--	181.9	191.8	188.9	135.0	124.0
Total	--	--	--	--	--	1,577.4	958.6	757.4	479.1	432.7

-- = Amount less than 1,000 tons or \$1 million, or not applicable.

1/ Data from before 1984 include estimated transshipments through Belgium, Canada, the Federal Republic of Germany, and the Netherlands. Beginning in 1984, transshipments other than through Canada are no longer included because of their decline in value and the difficulty in obtaining data.

2/ 1,000 pieces.

Sources: Bureau of the Census, U.S. Department of Commerce.

Table 13. Volume and value of U.S. agricultural imports from Eastern Europe, 1976-80 and 1981-85 averages and 1984-86 annual

Commodity and country	1976-80	1981-85	1984	1985	1986
1,000 tons					
Processed meat					
Bulgaria	--	--	--	--	--
Czechoslovakia	1.1	1.2	0.8	1.2	0.9
GDR	--	--	--	--	--
Hungary	7.6	11.2	13.4	17.4	15.2
Poland	39.4	25.7	26.2	32.7	36.0
Romania	6.9	3.9	3.2	2.0	3.5
Yugoslavia	14.6	11.0	14.1	9.4	8.4
Total	69.6	52.9	57.7	62.7	64.0
\$ million					
Processed meat					
Bulgaria	--	--	--	--	--
Czechoslovakia	3.4	3.2	1.8	2.5	2.5
GDR	--	--	--	--	--
Hungary	23.7	31.3	33.8	40.6	40.1
Poland	131.3	81.0	78.1	91.7	112.9
Romania	18.9	9.0	6.3	3.9	7.4
Yugoslavia	47.2	30.9	30.5	20.6	22.7
Total	224.6	155.5	150.5	159.3	185.6
Other products 1/					
Bulgaria	19.9	23.5	23.0	20.8	21.8
Czechoslovakia	3.3	7.0	8.3	5.1	11.2
GDR	2.0	1.8	1.2	2.5	0.5
Hungary	5.2	11.1	12.5	15.1	19.6
Poland	17.5	16.0	16.1	15.2	17.9
Romania	7.6	10.0	13.7	5.0	4.7
Yugoslavia	38.0	33.7	34.8	40.3	43.3
Total	93.5	103.1	109.6	104.0	119.0
Total					
Bulgaria	19.9	23.5	23.0	20.8	21.8
Czechoslovakia	6.7	10.2	10.1	7.6	13.7
GDR	2.1	1.8	1.2	2.5	0.5
Hungary	28.9	42.4	46.3	55.7	59.7
Poland	148.8	96.9	94.2	106.9	130.8
Romania	26.5	19.0	20.0	8.9	12.1
Yugoslavia	85.2	64.6	65.3	60.9	66.0
Total	318.1	258.5	260.1	263.3	304.6

-- = Amount less than 1,000 tons or \$1 million, or not applicable.

1/ Principally tobacco and wine.

Source: Bureau of the Census, U.S. Department of Commerce.

EXPLANATORY NOTES

Agricultural land: Arable land (cultivated land, gardens, and orchards), meadows, and pastures.

Council for Mutual Economic Assistance (CEMA): Bulgaria, Cuba, Czechoslovakia, the German Democratic Republic (GDR), Hungary, Mongolia, Poland, Romania, the Soviet Union, and Vietnam.

Eastern Europe: Northern Countries—Czechoslovakia, the GDR, and Poland. Southern countries—Bulgaria, Hungary, Romania, and Yugoslavia.

Metric units are used throughout:
One metric ton = 2,204.6 pounds
One kilogram = 2.2046 pounds
One hectare = 2.471 acres

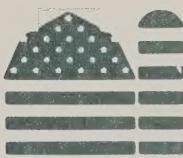
Cattlehides: one piece = 22 kilograms
Milk: one liter = 1.031 kilograms

Statistical data in this report are taken from the yearbooks of the respective countries, CEMA yearbooks, Annual Trade Yearbooks of the Food and Agriculture Organization of the United Nations, and 1986 plan fulfillment reports as reported in the country press. Other sources are noted as appropriate. Data on Albania are so scarce that the country is not covered here.

Eastern Europe



Boundary representation is not necessarily authoritative.



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Fred Kuchler and Harry Vroomen

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